

THE COUNTRIES OF THE KING'S AWARD

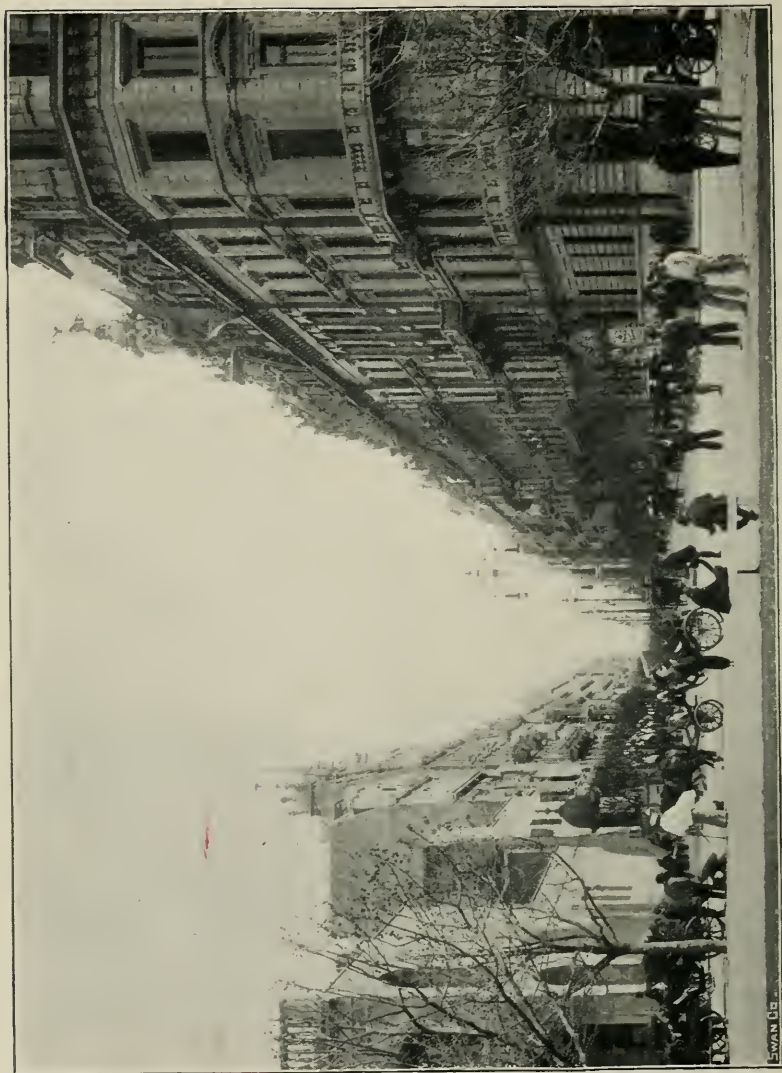


COL. SIR THOMAS H. HOLDICH, K.C.M.G., K.C.I.E., C.B.

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THE COUNTRIES
OF THE KING'S AWARD



AVENUE DE MAYO, BUENOS AIRES.

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BY

COL. SIR THOMAS HUNGERFORD HOLDICH,
K.C.M.G., K.C.I.E., C.B.

(A Vice-President of the Royal Geographical Society)

AUTHOR OF

"The Indian Borderland," &c.

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LONDON

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1904

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WITHDRAWN FROM

THE GEOGRAPHICAL SOCIETY
OF GREAT BRITAIN
AND IRELAND

PREFACE.

IN response to the request of certain friends I have endeavoured to write a book on the subject of the recent Arbitration between the two South American States of Chile and Argentina, whose long-standing boundary dispute in Patagonia was finally settled by the Award of King Edward VII. in November 1902. I am very well aware that impressions produced on a traveller's mind by a comparatively rapid tour through a large extent of country are necessarily immature, and may possibly be erroneous; but I can at least claim the advantage of the exceptionally good position for observation afforded me as a member of the Tribunal of Arbitration, an advantage which was maintained by the cordial welcome and invariable assistance extended to me by the Presidents of the two Republics, and by all members of Argentine and Chilean official Society. It has at least been a great pleasure to me to recall my personal experiences, and I can but offer this record of my impressions of Southern South America, and of its people, in witness to the deep interest which I shall ever take in their future development amongst the nations of the world

To Señor Don Vincente Dominguez, Secretary to the Argentine Legation in London, I am specially indebted, not only for his friendly advice and assistance during the period of my first intro-

duction to Buenos Aires and Argentina, but for much scholarly information which has enabled me to correct some misapprehensions and to add a value to the historical pages of this book which they would not otherwise have possessed. Nor must I omit to thank my colleagues in the field of demarcation, Dr. Francisco P. Moreno, Señor Don Alejandro Bertrand, and Dr. Hans Steffen, who, as experts and advisers in all matters connected with the boundary settlement, were ever ready to place at my disposal all the wealth of knowledge acquired by them of the countries which they so ably represented.

T. H. H.

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CHAPTER I.

HISTORICAL AND RETROSPECTIVE.

It was about sixty years ago that differences of opinion first began to find political expression concerning the dividing line between the States of Chile and Argentina in South America.

The natural resources of Argentina were developing ; her strength was increasing, and the tide of her expansion from the Rio Plata tended to flow westward and southward—westward into the inland valleys and inlets of the Andes, and southward over the broad pampas of Patagonia which lay beyond the Rio Negro. Such a tendency was not regarded with complacency by Chile, who, confined to a narrow maritime region between the Andes and the Pacific, thought she had reason to seek for avenues of national expansion eastward, and part of whose population had indeed already been squeezed by a hundred different by-ways through the Andes into the eastern valleys of the Cordillera and even on to the pampas beyond.

The people who were thus thrust across the mountain barrier of South America were chiefly of Indian stock, displaced by growing European colonisation, much

indeed as other Indian tribes (possibly of some remote ethnographical affinity) had been gradually shouldered out of the States of North America for similar incompatibility of disposition towards civilised pursuits.

Meanwhile Patagonia remained an unmapped and unexplored region of conjectural geography. Charles Darwin had been round the edge of it, and it may be said that what he wrote and conjectured about that country seventy years ago formed the basis of what nearly every writer has written and conjectured ever since, until scientific explorers of the type of Moreno took the field, and systematic geographical surveys were commenced.

Boundary disputes are proverbially bitter, and this dispute in particular raged for half a century with a vigour which was all the more intense that the actual basis of it was always obscure—either buried in the universal ignorance which prevailed as to the physical conditions of the districts concerned, or enveloped in a cloud of conjecture when those districts were but half explored. The fact that the parties to the disagreement were mutually connected by ancient ties of kindred imparted something of family bitterness into a quarrel, which, further, lost nothing by the active support of the press on either side, maintained in a language common to both.

The modern phase of the dispute may be said to commence with the Treaty of 1881 between the governments of the two republics which essayed to indicate the geographical nature of the line which should divide them. This treaty, however, failed, inasmuch as it admitted of diverse interpretations when the terms of it were applied to the existing physical features of the Patagonian Andes. A protocol, added in 1893 for the purpose of clearing away the mists which surrounded the original phraseology of the treaty, failed equally to

express in clear and distinct technical terms the nature of the geographical feature—or series of features—which should be adopted as the common boundary. Eminent geographers on either side argued the question with much earnestness and ability, and only proved how possible it was to interpret the provisions of both treaty and protocol in absolutely divergent senses, and with vastly different results.

Then at last the exploration of the country in question (the Patagonian Andes) was taken up in right good earnest, and surveys were carried through the valleys and mountains of the Cordillera which revealed at once the futility of dealing with the infinite variety of nature's dispositions as the geographical basis of a political agreement until those dispositions were known. Politicians, lawyers and even geographers, to a certain extent, lost sight of the fact that there is hardly a geographical term expressing a natural feature that will always, and under all conditions, bear one unalterable interpretation. Not even a "river," a "mountain," a "coast line" or that somewhat illusive geographical entity the "*divortium aquarum*" is always and everywhere to be unmistakably recognised. Thus experts disagreed in their interpretation of the conditions of the treaty, and finally, after careful and expensive preparations for an appeal to arms, and a balancing of the prospective advantages of a war which could only have resulted in disaster and ruin to one, if not to both countries, the question was submitted for arbitration to the British Government.

In November, 1902, King Edward VII. announced his award, and it is with the incidents attendant on the completion of the evidence which assisted to frame that award that this book is chiefly concerned.

We have spoken of the dispute between Chile and Argentina as partaking of the nature of a family quarrel.

Every traveller in South America will, however, recognise certain characteristics which mark a distinction between the two Spanish-American races now divided by the Andes, which are extremely interesting, inasmuch as they illustrate a phase in the evolution of national character such as can hardly be studied with equal facility in any other part of the world. I have heard it stated on both sides that difference of origin has something to say to this distinction, which is recognised by both; that the early derivation of the Chilean people from the provinces of Northern Spain rather than from the South, and, on the other hand, the prevalence of the Andalusian amongst the original emigrants to the River Plate, is the secret of a difference which is, after all, not more marked than it is between the adjacent provinces of many European countries. This, however, does not tally with the views expressed by the two governments, who appeal to community of origin and the common heritage of a glorious history as the basis of international friendship and future community of political interests. Historical evidence certainly appears to support the theory of a common derivation from Spain as a whole rather than from provincial sections of that country. In the record offices of Spain ("Archivo General de Indias," at Seville) lists are kept of the names of those men who composed the early expeditions to the New World; and these lists tend to prove that in the early days of Peruvian conquest, ere Peruvian Spaniards had yet drifted southwards into Chile in the first half of the sixteenth century, men from all parts of Spain were banded together under such traders as Pizarro, Almagro and Valdivia (themselves illiterate southerners) for the conquest of the Western world.

We find amongst about a dozen names of those who followed the fortunes of Pizarro, six Andalusians, four

Castillians, only one Basque, and one or two foreigners. All of them were of more or less humble origin, but they were subsequently made "Hidalgos" in recognition of their splendid achievements.

Emigration does not appear to have been altogether free. Herrera, the historian of the Indies, records that an order was issued by the great Queen Isabella la Catolica of which the object was to prevent any but Castillians from emigrating to America. All other Spaniards had to obtain official permission. Diego Barros Arana, in his "Historia de Chile," says: "The Spaniards could not come to America unless they had a permit from the king, which was not easy to obtain. Even those who could get it had to sail from Seville, which, in view of the difficulties attached to journeys by land in the metropolis, and the scanty communication between the provinces, was almost equivalent to shutting the door of emigration to the New World for all Spanish subjects who lived in districts far from Andalusia." Seville was the centre of emigration to all Spanish America, and so great was the number of its inhabitants who left for the New World that when the Venetian Ambassador, Andrea Navagiero, passed through the town, he thought that all men had gone away and only women remained. As this occurred at a time when only three expeditions had started for the River Plate, it seems evident that the early conquerors of Peru and Mexico were not drawn exclusively (nor even chiefly) from the ranks of Gallicians, Catalonians and Basques. If the evidence of language were worth anything in support of the theory of origin it might be noted that the Chilean language is said to be the most Andalusian in South America. No people in South America talk pure Castillian, but the States generally adhere to the rules of the Spanish Academy in their literature, and endeavour to preserve the purity of the mother tongue.

Whilst no stranger can presume to give an opinion on the style and literary excellence of the works of modern South American historians, novelists, and journalists, he cannot fail to note the differences of pronunciation which he will encounter as he crosses the Andes, and which are quite as marked as any provincialisms in England. It is clear that the same rules of pronunciation do not govern both Argentina and Chile. Another point which he will remark (especially if he has any long acquaintance with the East) is the prevalence of words which are either Arabic or of Arabic origin. And it may occur to him that Saracens and Moors, who between them occupied a great part of southern Spain for seven or eight centuries, and who only disappeared from Spain about the same time that history begins to record Spanish movements westwards to America, have left something more than a few traces of their language in moulding the nationality of the Spaniard. Stately courtesy, heroic courage, exquisite physical grace, combined with strong faculties of imagination and insatiable ambition, were the characteristics of the Saracens of old, and they are the heritage of the Moors and of the Arab races of to-day. The Arabs were world conquerors as well as world explorers, and not even the Spanish conquest of the New World can compare with their achievements in the Old. If a people such as this left no trace in the ethnography of Spain, if they implanted nothing of their imaginative temperament and spirit of adventure amongst the nationalities which peopled Hispania in the early centuries of our era, it would indeed be strange. But it appeared to me that certain characteristics were to be recognised amongst Spanish South Americans (especially marked in their physique and personal bearing) which were as Semitic in quality as the Arabic words in their language. However that may be, it is fairly certain

that neither Argentina nor Chile can claim the monopoly of any particular provinces in Spain as marking the "fons et origo" of their Spanish ancestry.

Chile was occupied originally by Spaniards who moved southwards from Peru in vain expectation of finding gold. Argentina was occupied by emigrants who came direct from the mother country. The first settlement in Argentine territory was effected in 1526 by a Venetian captain in the Spanish service who, seeking the connecting link between Atlantic and Pacific, was driven into the River Plate. The Portuguese had been in Brazil fifteen years before this, and as early as 1515 Spain had despatched an expedition to South America which had reached the River Plate, and, there losing its leader and much of its company at the hands of the Indians, had returned to Spain. The success of Portugal in Brazil, however, prompted fresh efforts, and in the very same year that Sebastian Gaboto found an accidental way to "La Plata" another Spanish captain, Diego Garcia, appeared upon the scene with full credentials from the Spanish Court, prepared to annex all that was left of the southern province of South America to Spain. But Gaboto was first in the field, and to him must be ascribed the credit of establishing the first European settlement in this territory, *i.e.*, the fort of Espiritu Sancto on the Paraná, the great northern affluent of the River Plate. This fort eventually fell into the hands of the Indians, and the rival captains, after much lively disagreement between themselves, set sail again for Spain. But the river had not been called "La Plata" (silver) for nothing. Whatever may be the origin of the name (the story varies considerably), the wealth of the country which it watered had acquired a reputation which appealed so strongly to the imagination and cupidity of the Spanish people, that a rich Spaniard named Mendoza (a famous

warrior and intimate friend of Charles V.) entered into a sort of commercial contract with his government and fitted out a fresh expedition.

In 1534 there left Spain the largest and most important of the expeditions which had so far gone from the Peninsula to the World discovered by Columbus. Lopez, in his history of the Argentine Republic, says of it: "His expedition is considered the greatest of those that had yet left Spain, as it was composed of 2,000 persons between soldiers and colonists, with a great number of noblemen and decorated functionaries of high rank." The subsequent story of the expedition has been told by one Ulrich Schmidt, who with a large number (about 150) of Germans and Flemish accompanied Mendoza. His quaint account of the expedition has been published by the Hakluyt Society, with notes by an eminent historian, the late Argentine representative in London, Don Luis L. Dominguez. It was then (1535) that the foundations were laid of Santissima Trinidad, subsequently known to all history as Buenos Aires. Santissima Trinidad did not last long under Mendoza. The country was then peopled by a tribe of Indians known as Querandies, not one of whom exists at present, and whose tribal affinities are shrouded in mystery, but it is conjectured that they were not far removed from the Pampas Indians who so long defied the military strength of the growing Republic of Argentina. Mendoza left Santissima Trinidad to the Indians, and was forced to take refuge in Gaboto's fort on the Paraná. Here he organised fresh expeditions, discovered Paraguay, and founded its capital, Asunsion. After a chequered existence of nearly 40 years the Spanish colony was re-organised by a Biscayan, Juan de Garay, who arrived with a fleet in 1573, founded the city of Santa Fé and refounded the abandoned colony of Buenos Aires. "The primi-



GLACIER ON TRONADOR, SOUTHERN ANDES.

tive settlers in the River Plate," says General Mitré in his "History of Belgrano and Argentine Independence," "were immigrants recruited amongst the most advanced classes and places in Spain . . . proceeding chiefly from the Biscayan provinces and Andalusia, they brought in their ethnical temperament the qualities of two superior races, the former haughty and manly, the latter imaginative and elastic."

Clearly, then, we must look to something more than divergence of origin to account for the ethnical difference in physique and in temperament which is so marked between the Spanish races of Argentina and Chile. Environment, and its influences through centuries of occupation, is no doubt chiefly responsible; but there is, besides environment, an uncertain factor in the extent to which the original Spanish settlers on either side suffered admixture with the Indian races whom they found in occupation of the soil. In Chile there is frank acknowledgment of this admixture with Araucanian Indian blood, many of the first families in Chile proudly claiming direct descent from this dominating and virile, but somewhat harsh-featured, race. The Araucanians appear to have been the natural successors to the advanced standard of civilization attained by the Incas; and it seems probable that much of the strength and manliness of the Chilean character is to be traced to this source—just as is the grace and beauty of the Spanish women to an eastern origin which they do not always admit.

Peru had not looked idly on whilst the foundations of Argentina were being laid. Expeditions from Peru were very early in the field, and to them several important cities, now Argentine, owe their existence. Amongst these are Tucuman and Cordova. Chile also had crossed the Andes and made settlements in the East. San Juan, Mendoza and San Luis all claim

a Chilean origin. But the national foes to Argentine precedence were ever the Portuguese. From decade to decade during the eighteenth century the weary conflict was renewed between Spaniard and Portuguese (England even lending a helping hand to Portugal), till in 1767 the Spanish general Zeballos finally established the ascendancy of Spain by driving the Portuguese from their colony on the River Plate. The Spanish Government, now firmly convinced of the importance of Buenos Aires, resolved to found a Vice-royalty, with that city as its capital. In August, 1776, Zeballos was appointed first Viceroy, and what then existed of Argentina became an integral part of the Spanish Empire.

Originally no European country except Spain had much to say to the development of either republic, or, for the first two centuries of Spanish colonial existence on the River Plate, made any great impression on Argentine ethnography. The historical relations between Argentina and England leave no room for self-congratulation on the share which this country had in the formation of Argentine nationality. In 1806, when England was at war with Spain, a British force occupied Buenos Aires. The Viceroy, Sobremonte, fled and left the city to its fate. There and then the destinies of Argentina might have been changed for ever but for the valiant fighting qualities of the Argentine populace led by an energetic Frenchman in the first instance, and the utter absence of military capacity in the British leaders subsequently. The time-worn and dust-covered remnants of eight British colours (four of which decorate the Church of San Domingo at Buenos Aires, and four at Rosario) still remind the visitor of a story which is almost forgotten in England, and which is treated with delicate reserve before Englishmen in Argentina. At this time (250 years after the first Spaniard had set foot on the Eastern shore of South America) the Spanish

colonies were still small, and they were almost purely Spanish. There were perhaps 35,000 inhabitants of Buenos Aires and somewhat less in Santiago de Chile. About the middle of the eighteenth century a ship of Anson's squadron (the *Wager*) was wrecked on an island now known as Wager's island, on the Chilean coast near the gulf of Penas. The story of the sufferings endured by the crew, and the final return of many of them by various routes to England, has been told more than once, but by none so well as by Lieut. Byron who, with the captain of the *Wager*, made his way after terrible privations to Santiago. His description of town and country life in Chile is the description of the habits and fashions of a community which was as essentially Spanish as the Society of Madrid itself, so far at least as those accessories of manners and dress are concerned which are usually reckoned as typical of Spain at that period.

There were but few French or English residents in South America at the beginning of the last century, but already there was a wide distribution of the Spanish race throughout the country and a tendency towards separation between the people of the country and the people of the town. The former appear to have been generally included under the term Gaucho in Argentina, and Huazo in Chile, and the distinction is still recognised. The term Gaucho as originally applied to the countrymen of the River Plate provinces apparently conveyed an impression of uncultivated "gaucherie" as contrasted with the educated refinement of the townspeople; but the Gaucho (now better known as "paisano," "campesino," or, according to his occupation, as "peon," "domador," "arriero," etc.), was destined to become a powerful factor in shaping the destinies of both countries; and the splendid fighting qualities which he exhibited during the long guerilla War of Independence

has earned for him the respect of all South American citizens. No one now regards the term Gaucho otherwise than as representing a class which forms the backbone of Argentine strength. It is this class which offers by far the largest contribution to the ranks of the army and the navy. How far the Gaucho owes his ethnical characteristics to admixture with Indian blood is uncertain. The Indian tribes of the northern provinces of the modern Argentina and Chile in the sixteenth century (tribes which have long since disappeared) appear to have attained a far higher status of civilized development, and to have represented a type of humanity altogether superior to the southern tribes (Tehuelches, Onas, etc.), of which we now find the scattered remnants in the southern provinces and in Tierra del Fuego. Probably they shared more or less the civilized instincts of the early races of Peru. But there does not seem to have been any very close admixture of the Indian and Spanish races to the east of the Andes. The modern Gaucho is often a typical Spaniard; and however much he may be allied to the Indians in his manner of life, he has preserved the Spanish tongue and claims Spanish affinities. Increased facilities of communication, and the obvious financial advantages of agricultural pursuits, are, however, tending to change the national character of the Spanish-Argentine countryman. The original Gaucho of the old-world type, the ranch rider and herdsman, seems destined to disappear.

The countryman of Chile is generically known as Huazo. Developed on similar lines to the Argentine paisano (but with more distinct evidence of Indian admixture in his blood), he only differs in such degree as the difference of environment has dictated. In the wide pampas to the east of the Andes are vast grassy plains, scattered forests, scanty water, and immense,



RIVER FRIO, SOUTHERN ANDES

[*Don Carlos Bruch.*

unlimited freedom. This is the country for the ranch rider and the herdsman, but not for the agriculturist in the first instance. Thus the Gaucho has ever been a man of the saddle and the lasso, but never, until quite lately, of the spade or the plough.

To the west of the Andes the rich and fertile soil of the Central Valley of Chile has demanded an agricultural population to develop its resources, and thus the Huazo has become a husbandman and a farmer as well as a cattle breeder. Like the Gaucho, he is famous as a horse and cattle master, and his development in forest and field has given him a general capability for work of all sorts. He is more of a bread eater than his compatriot on the other side of the mountains, who frequently lives on meat alone for months together. A company of Gauchos should prove the most effective light cavalry in the world—better even than the Cossack of the Russian Steppes or the Boer of the Transvaal—for they ride like Centaurs (covering enormous distances) and carry all their limited requirements with them. It is said that these “campesinos” (Gauchos and Huazos alike), the country-bred product of South America, are rapidly becoming absorbed into civilized centres. If so, civilized centres will be none the worse for the admixture of such a splendid type of humanity as they represent, virile, free and fearless, with strangely little tendency towards that class of crime which is usually designated “petty.”

The countryman (taking the type as a whole) represents the true Spanish South American, and is to a certain extent in contrast to the townsman, who is far more cosmopolitan than Spanish on whichever side of the Andes he lives. The change dates more or less from the War of Independence and the foundation of the Republic.

All South Americans (to resume our short sketch of South American history) struck for independence in the year 1810. In that year Argentine independence was

inaugurated by the constitution of a revolutionary committee to superintend the administration of the country.

The committee took office on 25th May—which is a red letter day in the Argentine calendar for ever. The part which Argentina (then the “River Plate Provinces”) played in the general revolutionary programme was confined at first to successful defence against the Spaniards who held Monte Video, and to an attempt to strike at Spain in her most vital part by despatching an army to Peru under General Belgrano. General Belgrano was severely defeated by the Spaniards, but he finally gained a most important victory at Tucuman in 1812. It was then that the great national hero of Argentina appeared on the scene.

San Martin had served in the Peninsula War with great distinction as a young officer, and had gained great experience at an early age. He was placed in command of an Argentine force, and speedily made his mark as a military leader. He defeated the Spaniards at Rosario in 1813 and subsequently took Belgrano’s place in chief command, after that General had again been badly beaten. In 1814, after the destruction of the Spanish fleet by Admiral Brown, Monte Video fell, and the Spaniards disappeared for ever from the River Plate.

Argentina was now practically secure, and although by 1816 the Spaniards had succeeded in re-asserting their authority throughout the rest of the South American colonies, the united provinces of the River Plate retained their informal position of independence. It was the genius of the Argentine General, San Martin, that finally effected the freedom of the other states of South America, which was so essential to the security of Argentina. By a magnificent combination of military and political strategy, which has gained him the foremost place amongst popular Argentine heroes, he first of all liberated Chile, then, in alliance with Chile, he dominated the Pacific and set

Peru free. Finally, with the combined assistance of Chile and Peru, he procured freedom for Colombia. It was given to San Martin to discern the value of scientific guerilla warfare. It was by what may be termed irregular military methods that he gained such signal triumphs. In 1822 the independence of South American republics was recognised by North America; and it was then for the first time the world heard the expression of the Monroe doctrine.

On the 18th of March, 1823, the Marquess of Lansdowne made a notable speech in the House of Lords in favour of England's recognition of the political status of the South American republics; but it was not till 1824 that Canning substantially admitted that independence as an accomplished fact. England had, at times, given diplomatic, if not direct, assistance to Argentina in the course of her struggles, and this fact is always gratefully acknowledged in the pages of Argentine history. In March, 1816, a National Congress had been held in Tucuman, which solemnly proclaimed, on July 9th, the independence of the United Provinces, and General Pueyrredon was appointed director of the Confederation. Thus July 9th is the true "Independence Day" of Argentina, and is the great fête day of the year. It is true that the Provincias Unidas did not remain united long, and the periodic disruption and reconstitution of the Confederation strikes a note of variation in the general Argentine history of revolutions and international struggles with Brazil.

I have often heard the question discussed of the position which Argentina might have held in the world as a British Colony. General Bartolomé Mitre, soldier, statesman and writer—one of those men whose names live through all time as landmarks in a nation's history—pauses in his admirable story of the life of San Martin to conjecture what would have happened if England had succeeded in asserting her supremacy in South America

in the beginning of the last century. He admits that as a colony under the protecting wing of "free England" a more stable administration with a more continuous policy might have developed the country to a far greater extent than that which it exhibits at present ; that in all material matters, in commercial, political and military as well as naval advancement, it is probable that the country we now know as Argentina would have been the gainer. "But then," he adds, "we should never have been a Republic ;" and he regards the example set to the world by the concerted action of South America in her strike for independence as a great moral lesson which could not fail to influence the older world of monarchies, and raise South American republics to a front position in the work of the world's regeneration. This is a high ideal, but there are many less gifted men than the great General who would have preferred the material gain to the moral example. This, at least, is an opinion which I have heard frequently expressed by some who ought to have the means of casting up the account and striking a balance of material profit and loss.

The independence of South America was worked out by South Americans. There was no importation or employment of foreign mercenaries, such as, under similar conditions, has introduced a foreign element and produced a marked modification in the ethnographical status of other countries. It was not till the position of the republic was well assured and the material development of its rich territories had commenced, that the tide of European immigration set in which combined with original elements to form the modern national character of the Argentines. It is rather difficult in these days to define an Argentine. A hundred years ago he was certainly Spanish, but Spanish immigration to South America has not been sufficient to maintain the pure simplicity of his extraction. Moreover, the laws of naturalisation

now make every man an Argentine who is born in Argentina. Even two years' residence is sufficient qualification to enable a foreigner to take out his certificate of Argentine nationality. And foreigners have floated into the country in shoals, chiefly from the Latin countries of Europe. Italians and French combined have far outnumbered Spanish in the records of recent immigration, and it is undoubtedly to this great influx of the Latin races, and the prominent position which they occupy amongst foreign immigrants, that we must look for a certain predominance of Latin sympathies which seems to affect the whole spirit of Argentine nationality. At the present day it is probable that foreigners of Latin races—Italians, Spaniards and French—by far outnumber foreigners of other extractions. Nevertheless the country welcomes and even helps immigration of other races, and, in fact, Welshmen are abundant in some regions of Patagonia, Irishmen in a certain zone of the Province of Buenos Aires, Swiss and Germans in some colonies of Santa Fé, and Poles in the National territory of Misiones. The census returns for 1895 give the proportions as 746 Argentines to 254 foreigners in every 1,000 inhabitants. It would, however, be more interesting to know what proportion of the 746 Argentines are Spanish-Argentine. This is an ethnical problem which it might be difficult to solve. I have seen statistics quoted from which the conclusion was deduced that the Spanish-Argentine (*i.e.*, the ruling race of the country) was in danger of complete absorption by the non Spanish-Argentine element of Argentine nationality. This conclusion was based on marriage statistics, which showed that the proportion of marriages between "pure" Argentines was only 3 per mille, and that amongst Argentine women more than half marry foreigners. It is, however, not a question of more than ethnical interest. It is certain

that the great human amalgam which now forms the Argentine nation constitutes a strong and vigorous nationality. If it is cosmopolitan in its structure, it is absolutely solid in the strength of its patriotism and loyalty to the Argentine flag. Argentine descendants of non-Spanish settlers are not to be distinguished from the lineal descendants of the conquerors of South America in their devotion to the cause of national unity. Indeed, some of the latest recruits to the ranks of the nation may be said to out-Argentine the Argentines. In this sense, and to this extent, it is more probable that the Argentine absorbs the foreigner than that the foreigner absorbs the Argentine.

In spite of the numerical insignificance of the English element, the influence of English customs is very marked, especially in such social functions as appertain to sport, and the English language is heard on all sides. Although English commercial interests have undoubtedly suffered by competition with Germany, and English firms occupy less prominent positions than formerly (owing, it is said, to their own conservative methods, and the failure to appreciate the rapidly-changing requirements of the times) there is no general lack of British enterprise or interest in Argentina. England has probably more direct financial interest in Argentina than all other foreign countries combined, and that interest has largely increased during the last ten years. It is at present represented by at least 250 millions of capital invested in Argentine securities.

No foreigner has any voice in the administration of the country ; Argentina is governed by Argentines exclusively.

The Argentine of the city, as might be expected, differs in many essential characteristics from the Argentine of the country. In the higher ranks of society he has often been described as a good-looking, well-dressed

imitation of the Parisian ; a good linguist, possessing charming manners, and a leaning towards such polite



FRUIT BOAT ON THE PARANÁ.

professions as are indicated by politics and law. Buenos Aires is claimed by the Argentines themselves to be the second biggest Latin city in the world (Paris ranking

first), and there is more in the comparison than is indicated by mere size. In many ways the city strikes the stranger as being very Parisian in aspect, and the social atmosphere seems to be full of the brightness and life which we are accustomed to associate with our ideas of France. Argentine schools are good, and the Argentine boy is probably better educated in many respects than he would be at an English school. Nevertheless, many boys are sent to school in England by parents who recognise that there is something more in an English public school education than mere academic teaching. To a casual visitor like myself, Argentine society appeared delightful. In recording my own personal experiences it is an exquisite pleasure to me to recall the friendly hospitality, the invariable courtesy, the promptitude with which all my wishes were carried out, and the loyal and invaluable assistance in matters of business which were ever afforded me by Argentine officials. "Mañana" (to-morrow) has often been quoted as an Argentine business motto. Never to do to-day that which can be put off till to-morrow is, however, not an axiom which is peculiar to Argentina (if it is Argentine at all), as those who have had much experience of British workmen can testify. The Argentine Republic is a great country inhabited by a go-ahead people, and at the present high pitch of her civilization she has reached a maturity which places her in line with the older nations of the world. Consequently she is open to have her faults as well as her merits freely discussed. For my part I write of her as I should write of any of the old nations of old Europe, but so far as I was personally concerned I made no acquaintance with Mañana.

We have seen that the origin of all Spanish-speaking peoples of Southern South America is practically the same ; that they can appeal to the same ties of ancestry

and early history as the basis of a political union which no rivalries ought to disturb. Nevertheless, the long influence of different environment, the separation effected by the massive wall of the Andes, and possibly some admixture with native races, has established (as I have already observed) certain differences, both of temperament and physique between the peoples of these two southern states which cannot be ignored. No one, for instance, would recognise anything of a Parisian atmosphere about the social life of the towns of Chile. It strikes the stranger as often more English than French; more Anglo-Saxon than Latin; and the absence of any large influx of Italian emigrants (such as has assisted so greatly in the agricultural development of Argentina) leaves a preponderance of colonial interest in the hands of German and other Anglo-Saxon races, which is a very marked feature in the life of the country. It would almost seem that in the maritime character of the Chilean settlements and the immense hinterland of mountain and forest the "proud and manly" northern Spanish races (Basques and colonists from Estramadura, Galicia and Old Castille) found a new environment which recalled many features of the old, and was peculiarly suitable for the preservation of their national characteristics. To this day the fair hair and blue eyes of the Galician Spaniard may be seen to the west of the Andes; and about the stately beauty of Chilean country houses there seems to linger a reminiscence of the old-world aristocracy and chivalry of the days of Cervantes.

Foreigners are not unwelcome in Chile, and immigration is necessarily much encouraged. But there is not the same vast field of unoccupied territory to the west as to the east of the Andes, and consequently immigration is not on the same scale. Germans, Danes and Swedes are all encouraged as Colonists, and the Anglo-Saxon

race generally seems to gravitate towards Chile rather than the Latin. I have been in a district where the only alternative to the Spanish tongue was German. English is, however, generally taught in Chilean schools and is frequently heard in the streets of Santiago and Valparaiso. Every officer of the army and navy has more or less acquaintance with the English language, and I have been on board a ship where I heard more English than Spanish. Spanish is, however, the national tongue.

The long, narrow maritime state of Chile possesses one magnificently fertile valley, which traverses a great part of its length; and a stretch of ocean shore which, with its innumerable islands, its indentations and headlands, is enormously extended in proportion to the size of the country. Thus there has always existed on the Pacific coast a sea-going population—a people born and bred within sound of the surf. The deeply indented coast and the rugged islands which lie off it have ever been the home of a race of “canoe” Indians who have hunted and fished through its narrow creeks and twisted inlets from time immemorial. These creeks and bays afford a retreat from the periodical hurricanes of the north and west, and security from the terrific force of the ocean-borne waves. A sea-loving population is accordingly one of the natural products of Chilean geographical configuration, and the mixed race which now occupy the coast towns and some of the larger islands are sailors from their birth. The Chilote inhabitants of the large island of Chiloe form an interesting and important section of the Chilean population. Chiloe is the nursery of the Chilean seamen.

Another, and totally distinct, class has been developed by the mining interests, but the mining class of Chile includes a very large foreign element—an element

which is an integral part of that great company of Uitlanders which adds nothing to the governing power of the country and only regards international disputes in a spirit of expectant interest.

The influx of the foreigner is comparatively recent in Chile.

It must be remembered that Spain retained her grip on Chile long after the United Provinces of La Plata had effected their liberation. The successful manœuvres of San Martin only resulted in the temporary liberation of the country. There followed the period known in Chilean history as the "reconquista," when the Spaniard reasserted his authority, which had never been entirely lost either in the island of Chiloe or in Valdivia. It was not till 1828 that the real foundation of Chilean independence was effected; and it was not till later still that that independence was recognised by the people of Chiloe. It is said that there are old men on the island who yet speak of "The King," believing, in some vague and shadowy way, there is still a king for Chiloe.

In the extreme southern province of Chile, near where the great central valley terminates at the Gulf of Peñas and the broken outline of the Patagonian western coast commences, we now find flourishing colonies which are almost completely Uitlander—chiefly German—with a slight admixture of the British element. In still more southern districts, again, adjoining the Ultima Esperanza inlet to the north of the Straits of Magellan, are wide areas of grass country, broad valleys enclosed by mountains, sloping with easy grades to grass flats (favourable enough for pasturage), which are occupied exclusively by colonists of German or British extraction, to whom the politics of Santiago are a matter of but passing interest so long as they do not affect the price of wool or of grease. Within the limits of those districts of Western Patagonia which have lately been under

dispute, and which the King's Award has finally decided to be Chilean territory, there are but few "native" settlers.

Both Argentina and Chile owe much of their material development to the foreigner. On both sides the Andes the educated working principle in the development of such enterprises as occupy the bridge builder, the road maker, the railway projector, or the irrigation engineer, is Anglo-Saxon; whilst in Argentina, a large community (far outnumbering the Anglo-Saxon—a community which fills the cities and the coast towns, and spreads through the provinces as the agricultural working class) is Italian. There was, however, no room for race antagonism in such a political struggle as the time-worn boundary dispute which had just come to an end. Such political campaigns are directed by a special class—the class from which the administrative element is drawn—and this class is essentially Spanish in nationality, and chiefly legal by profession. Great as is the prestige of the army and navy in both countries, and loyal as the South American citizen may be in his devotion to a successful commander by land and sea, it is, after all, the lawyer who leads popular opinion and can appeal with most success to the popular taste in journalism. Between the army and the law, it is the latter which usually predominates in the councils of the republic. Ties of kindred origin, of ethnic affinity, and common history, hardly served to modify the bitterness of the quarrel whilst it lasted. All classes alike, military, naval, legal and literary, are interested in questions affecting land development in South America, for nearly every South American gentleman understands farming; and thus it happened that interest in the boundary dispute was absolutely universal. It affected even the foreign residents in the two republics. The whole community took part in it, so it is hardly surprising

that, after lasting more than half a century, it nearly ended in a bloody war.

Immense legal argumentative capacity was brought to bear on the intricate questions involved in a dispute which incidentally opened up such an unlimited field for political campaigning ; and undoubtedly the geographical uncertainties which shrouded many of its most practical issues furnished wide space for imaginative rhetoric.

CHAPTER II.

THE GEOGRAPHICAL BASIS OF THE BOUNDARY TREATIES.

THE fundamental basis of nearly every boundary dispute of any magnitude in history has been geographical ignorance. As the waste areas of the world gradually become absorbed by the encroachments of civilized communities—spreading and straining after room for the increase of their numbers—and as the uncivilized but more picturesque members of the great human fraternity get shouldered out of existence, unable or unwilling to exchange their heritage of natural freedom for the strenuous life entailed by earnest industry, it very frequently happens that wide stretches of aboriginal forest and plain which have been regarded as unprofitable and inhospitable wastes so long as the savage possessed them, assume all the seductions of a promised land when there appears to be an ultimate chance of their reclamation to civilization. Then follows the race for possession and the necessity for deciding on lines of partition such as those which have within the last half-century turned the map of Africa into patchwork, and have set boundary commissions to work all over the face of Asia.

The general theory of a boundary usually makes that boundary geographical in its character. Occasionally such arbitrary lines as those represented by parallels and meridians, or other straight lines, are adopted; but the difficulty of deciding on their true abstract position, and

the subsequent difficulty of demarcating them plainly on the face of nature, generally ends by a strike in favour of the adoption of actual geographical features (rivers, mountains, lakes and the like) such as cannot be mistaken, and which serve the purpose of a boundary without the intervention or assistance of artificial aid.

Nor can there be any doubt about the wisdom of adopting such geographical features. For instance, nothing has conduced so largely to the practical separation of peoples and the natural evolution of different races, as ranges of high mountains; and, although a river may lead to difficulties when it wanders through an open plain, changing its course from time to time, carving out new channels, throwing up new islets, and absorbing large areas of productive land along its banks; it may serve a most useful purpose as a boundary when its course is confined between rocky and unbroken limits, unalterable by any effort of nature acting under the ordinary laws of continuous progression. Such rivers, indeed, have often maintained their original course through long geological ages, carving out for themselves deeper and deeper channels along the same ancient bed, whilst the mountains around them were still changing their form and their altitude, throwing aloft new crests and spreading abroad new ribs. But it is hardly necessary to consider the question of geological evolution. International boundaries are not geological features, and it is enough for most politicians to accept the face of nature as it exists, selecting from its infinite variety such features as may be desirable, without enquiry into their geological derivation or the prospects of their permanence.

The official boundary treaty or agreement has its birth between rival nations when leading politicians, representing the divided interests, agree to meet and decide, with all formality and as much minuteness as possible, where the dividing line shall be which in future is to se-

parate the responsibilities of two governments. No disagreement usually arises with the treaty. Each party to it has his own conception of its limitations, and there should at least be no doubt that (when the treaty embodies an agreement between two civilized powers) an honest determination to arrive at a satisfactory decision results in that conception being the same on both sides. Both parties to the agreement mean the same thing in their official declarations, and the ideal boundary fixed by treaty is one which they both see with the same eyes. Where one party to the agreement is not civilized, or is guided by a policy based on the usual standard of Asiatic political morality, it may perhaps be doubted whether the official statements of the treaty are always intended to carry the same meaning. But in ordinary cases it is sufficient if we assume that they do so. Thus the actual treaty definition presents no grave political difficulties. The very fact of the existence of an international meeting to arrange a common basis for boundary demarcation argues a desire for peace on both sides. A simple boundary dispute, involving no greater issues than may arise from the possession of a more or less undeveloped and unattractive space of country, can seldom be worth a war. The loss would be so inconceivably greater than the gain, no matter with which side the ultimate victory rested, that politically it can only be regarded as the extremity of foolishness to fight over a boundary question for its own sake alone.

Such a war would be a humiliating spectacle in the eyes of all civilized humanity. Every statesman worthy of the name acknowledges so much, and consequently boundary treaties are common enough in the world's history, and the general tendency and intention of them all has been undoubtedly towards peace and goodwill. How is it, then, that more wars and risks of war have arisen out of boundary treaties, probably, than out of any other form

of international political agreement? If the treaty is a symbol of peaceful intention, where does there occur that special note of aggravation which, evoked by the very treaty itself, often renders it difficult to adjust a boundary without an appeal to arms? It almost invariably lies in the official form in which the treaty is expressed. The germs of it are hidden in the multiplicity, or ambiguity, of political phrases which, whilst attempting precision in detail, only serve to engender confusion. In fact, treaty-makers occasionally forget that a boundary is a geographical as much as a political feature, and that to attempt precision in definition without a precise knowledge of nature's adjustments in the country in question is merely to invite dispute.

When accurate maps of the disputed territory exist, then indeed precision in detail is not only justifiable but obligatory. It is seldom, however, that this is the case, and seldom indeed that well-meaning if not highly-gifted politicians possess the technical geographical knowledge which would lead them to insist on surveys first and treaties afterwards, rather than trust that the arrangements of nature may finally be found to fit the terms of the treaty.

When it was decided that a boundary should be set to the advance of Russia eastwards from the Caspian towards Afghanistan and India, by defining the northern boundary of the former country from the Persian border eastwards, the treaty-makers were dealing with a part of Asia which had seldom been traversed by Europeans: which possessed but few landmarks of which the positions could be said to be fairly well determined; and of which such conjectural mapping as existed was of the most nebulous character. Yet they did not hesitate to rely upon certain details which were to be found in a most uncertain map, and to embody the names of places in the agreement which they could only hope by the grace of

providence might be found to exist where they were represented to exist. Of the perfect good faith of both parties to the agreement there never was a shadow of doubt ; and the agreement itself was hailed as finally closing a long protracted era of suspicion and of mistrust between two great countries by a solid and satisfactory understanding. Then to the phase of treaty-making succeeded the phase of practical demarcation. After a stormy and troubled year on that far-off frontier line, during which it was clearly proved that the peaceful intentions and the goodwill of the treaty-maker had not prevented mistaken geographical conceptions, and only after the firm hand of the statesman at the head of England's policy had stayed war between Russia and England, the actual process of demarcation commenced. A few months of scientific geographical surveying would have shown clearly enough that the treaty definition did not fit the geographical facts of the situation ; but opportunity for such examination had never occurred. The two commissions split on a point of geographical identity, the demarcation broke up, and the official staff on either side withdrew from the field. Subsequently a new agreement had to be formulated for a part of the line, and new demarcating parties sent out. The work of a boundary commission which should have been completed within six months was thus extended to the end of two perilous years. To the enormous cost of the commission there was added the cost of war preparations and all the financial issues that occurred in the money market.

Many more instances might be quoted where inaccurate geographical knowledge, or positive geographical ignorance, in the formulation of boundary treaties, has led to results more or less disastrous ; but as the only object in quoting such instances is to prove that the recent disagreement between Chile and Argentina is no new feature in modern history, and is due to no exceptional want of

statesmanship in the diplomatic departments of the respective governments, it is hardly necessary to quote them. At any rate, the boundary dispute which existed for more than half a century between the republics of Chile and Argentina, and which has probably cost both countries the price of a new army and navy, was almost purely geographical in its conceptions and its issues. The line of partition between the two countries north of Tierra del Fuego follows the Cordillera of the Andes for about 2,000 miles. Nearly one-half of this length presented no difficulty to the demarcators when they proceeded to carry out the terms of the treaty of 1881—a treaty which was finally to determine the position of boundary line and close the dispute. For 900 miles the magnificent sierras and gigantic peaks of the Andine system were found to be arranged by nature's hand so as to meet satisfactorily man's demands on their utility as boundary fences. The long lines of cordillera extend meridionally nearly parallel to the Pacific coast, with a dominating central axis, or main range, unbroken and impassable except at certain recognised points. It is a majestic mountain feature, forming as splendid a natural barrier as the great world can show, or the heart of man desire, for his little separations and nationalities. From one side of this great divide the snow-filled streamlets collect into wider channels and make their way to the Pacific. On the other are the beginnings of yet larger rivers which flow through the wide pampas to the Atlantic. So far nothing could be better or more appropriate. Chile occupied the basin of the Pacific whilst Argentina set up her flag on the banks of the Atlantic streams. But north and south of this central division, geographical configuration (in other words, the topography of the Andes) did not fit so conveniently to the conventional ideas of the treaty-makers.

In order to understand the nature of the difficulties

which arose it is necessary to describe, shortly, a few of the main geographical characteristics of the continent of South America.

The continent of South America slopes upwards by grades, which are often almost insensible, from the Atlantic coast to the Andes. The greater part of the north of it is occupied by the low flat basin of the Amazon. To the south the Paraná and the Uruguay, uniting to form the River Plate, form another and much smaller basin. All the western affluents, the initial streams, of these two mighty systems have their birth in the mountains—either in the main ranges of the Andes or in the outlying ridges which form the eastern fringe of the Andes. Here and there it happens that the birthplace of the infant streams is comparatively close to the Pacific coast, thus establishing a curious analogy with other great continents of the world. With the Andes that overlook the Amazon basin and the upper reaches of the Paraná this story has nothing to do. There lie Brazil, Bolivia and Peru, which republics, between them, will probably have their own boundaries to settle hereafter. But where the Paraná stretches out an arm to the hills westward, till it touches the southern boundary of Bolivia with the points of its fingers, there commences the northern section of the Chile-Argentine boundary which formed matter for grave consideration and discussion.

As seen from the Chilean coast line, the serrated lines of Andine Cordillera, piled range after range and presenting a magnificent wall of rugged mountain side as the visible boundary to the narrow band of Chilean territory, above which the white cloud-tipped summits of a wonderful array of volcanic peaks watch the restless coming and going of Chilean ships, form the conventional ideal of a stupendous mountain range.

But it does not always present the same aspect from the eastern side. Here the dividing line between



PEREZ ROSALEZ PASS—ON THE MAIN WATER PARTING.

[*German Wiederhold.*]

mountain and plain is sometimes difficult to define, and the traveller from the East may find it hard to say where "pampas" and "mesetas" end, and where the Cordillera begins. The configuration of the Andes of Northern Chile, and the part that they play in the orographic anatomy of the great continent, may be compared to that of the Himalaya in Northern India. They form the abutment, or "reborde," of a gigantic upraised tableland, to which the eastern plains by successive grades gradually attain, but which descends on the west to the Pacific coast by a magnificent natural staircase, each step of which is a separate range. The similarity extends even to the physical characteristics of the mighty uplands which the Andes and the Himalaya embrace. There is the same scene of wild stony desolation in the vast broken plateau land of Western Tibet that there is in the Puna de Atacama of Northern Argentina and Chile—the same rugged wilderness broken by disturbed and disconnected ridges of immense elevation. The same white-edged and leprous-looking blotches on the landscape which denote salt swamps and lagoons. But there is more of continuity and decision in the character of the desolate masses of mountain which intersect the Tibetan plateau than there is in the Puna. The whole atmosphere of the latter reeks of volcanic action. The soil is frequently covered for miles with the residue of volcanic ash. The mountain peaks stand apart, shaped into cones and connected by undulating waves of grassless country, sometimes approaching each other in clusters, but seldom forming a well-defined ridge of any great continuity. Both regions are enormously elevated, reaching to 5,000 metres (16,000 feet) above sea level; both are swept by icy blasts of intensely cold wind, or scorched by a blazing sun, and on both there is the same weary want of vegetation, the same absence of water and

scarcity of fodder. The Puna de Atacama, as I have said, lies to the north. It is to the north of that long line of definitely determined boundary between Chile and Argentina where the two governments were able to find a satisfactory interpretation of their treaty in the dispositions of nature. But through the waste of the Puna de Atacama no such solution was found possible, and this was consequently one of the disputed sections of the boundary. It was finally decided to accept the services of the American Minister at Buenos Aires (Mr. Buchanan) as the intermediary who should decide on a suitable and satisfactory line, and accordingly Mr. Buchanan with two colleagues—who represented Argentine and Chilean interests respectively—evolved a theoretical boundary by the simple process of drawing straight lines on a map from point to point. This 300 or 400 miles of boundary was accepted, and there the matter would end, but for the inevitable demarcation. In order to arrive at it, steps have been taken by both Governments in the friendly spirit now prevailing between them, though it might be considered as a country in which the condor and the fox were likely to be the only disputants. Passes and small scattered oases of grass and water exist at intervals, and the rights which appertain to them have been defined by agreement.

This section of the boundary, however, forms no part of the King's Award. It was an important part of the original dispute, but it was disposed of by the American award previous to the formation of a British Tribunal. With the exception of a comparatively small section of disputed territory in the neighbourhood of the San Francisco pass across the Andes (south of the Puna de Atacama), the actual boundary line between Chile and Argentina which was adjudicated by the British Tribunal commences at Lake Lacar, in about 40° South latitude,



MOUNT TRONADOR, SOUTHERN ANDES.

and extends for nearly 900 miles southward to the parallel of 52° South latitude, beyond which point an agreement had already been secured. This is the region of the Patagonian Andes, Patagonia comprising all the southern extremity of South America south of the River Negro, which traverses the continent from the Andes to the Atlantic. The boundary here passes through a region of mountains and lakes, very different in many essential points of its configuration from the Andes north of Lake Lacar, where the one long extended and dominating meridional range had been found which carries on its crest the international dividing line; and absolutely different from anything that we know of the Puna de Atacama still further north, with its salt wastes, its isolated volcanoes, and its borax fields. The lofty battle-mented crests of the Trans-Himalaya on the extreme north-west, where rugged peaks of naked frost-cracked rock look outward from the embrace of snow fields and eternal glaciers to the bleached and wind-swept plains of Western Tibet, are not more different in their physical aspect from the forest-clad slopes of the Himalaya of Darjiling and Kanchangjanga than are these northern Andine Cordillera from their Patagonian extension.

When the great round world gradually cooled from its primæval condition of perpetual effervescence, and its crust contracted into ripples and folds, it wrinkled up the Andes generally (as it wrinkled the Himalaya) into a rough series of parallel flexures, which have more or less determined the shape of the South American continent ever since. And we may suppose, if we will, that the same irresistible force acting on similar lines would continue to produce the same effect southwards, prolonging the mountain folds even to the South Pole. It does not seem improbable that this was so; but evidence is wanting to prove the old-world connection between South America and that yet more southern continent

which the *Discovery* went to explore ; and meanwhile the whole face of Patagonian nature has changed. How often and to what extent it has changed, who shall tell ? Twice, at least, has the whole region been buried for geological ages beneath an ice-cap as deep and as weighty as ever buried Great Britain, or still buries Greenland. The glacial epochs have perhaps left the more impressive traces. All the physical appearance of a country where primæval rock ridges have been rounded, smoothed, polished and scratched ; and whose plains have been dotted with ice-borne boulders and fragments of the far-away granite hills, are to be found in Patagonia. Scooped-out glacial beds, the traces of ancient, and the existence of modern, lakes (relics of departed glaciers) bear witness to a series of climatic and physical revolutions, of which the snow-bound summit of the western Cordillera overlooking the straits and inlets of the Pacific is probably the last existing remnant of the earliest phase.

How many periods of terrific volcanic action may have preceded or followed the glacial epochs it is impossible to say. They appear to have continued through the whole tertiary age. What scenes of waste and desolation the magnificent series of volcanic peaks, which stretches one by one up the length of the cordillera facing the Pacific, may have assisted to spread abroad, we can only faintly guess. All we see is that Patagonia has from time beyond reckoning been subject to violent cataclysms and throes of nature far beyond what are usually found recorded in the rocks or written on the landscape of other lands, and that the effect of them, together with incessant alternations of upheaval and depression, has been to destroy the beautiful symmetry of parallel flexures, dominated by one continuous and highly elevated water-parting, which distinguishes the more northern Andes, and which is so happily convenient for

theoretical boundary makers. The more gentle efforts of nature, the gradual upheavals and subsidences which are ever undulating the earth's surface, throwing up old sea-beds and lake-bottoms, and dipping forest-clad slopes under the edge of the sea, are just as much in evidence as are the vaster and more violent efforts of volcanic action. You may find modern sea shells and the



ON LAKE PAZ

recent lines of high-water mark plainly visible a hundred feet above existing sea level not far from the edge of a gulf where a submerged forest is still to be seen below it. I have heard Patagonia likened by an able geologist to a gigantic concertina moving gently to the strain of musical chords.

What exists now of the Patagonian Andes is to be found in three meridional zones. There is the one on the west—the submerged zone represented by the great archi-

pelago of islands divided and shaped into irregular blocks by the straits and inlets of salt water which reach down to the Magellan Straits. Here we recognise the extension of the great meridional depression which forms the Central Valley of Chile. Next there is a central zone, about the structure of which we really do not know very much, as a great part of it is unexplored and unexplorable. It is still partly buried beneath snow fields, but it is easily traversable from east to west by many great transverse gaps which conduct the waters of the Upper Lake region to the Pacific. Analogy would certainly lead one to conjecture that some at least of these openings through the central mountain mass were aforetime salt water connections with the series of similar inlets (now forming lakes and rivers) which once belonged to the Atlantic system in the East. Darwin thought so, but it is only right to say that strict geological evidence (such evidence as would be afforded by the existence of certain marine fossils, for instance) is incomplete. Analogy would also lead us to conjecture that hidden underneath the heavy snow-cap of the central mountains we should find very much the same configuration as we find both to the east and west of it, *i.e.*, great polygonal masses of mountain form with either no dominating ridge to indicate a tectonic axis, or else a visible linear axis set at an oblique angle to the meridian with no attempt at parallelism between contiguous ridges. The eastern or third zone is another great meridional depression—the zone of lakes (modern and ancient) divided by mountain masses of irregular structure, but themselves stretching invariably in directions transverse to the meridian and across the Andes, and following the erratic lines of tectonic fracture which indicate trans-Andine drainage. These lines of drainage where the rivers run across (and through) the mountains, either from east to west, or from west to east, appear to be the last indica-

tions of that primæval cracking of the earth's crust which must have attended its contraction. A general plan of Patagonian hydrography reminds one of nothing so much as of a dried mud-bank after the water has left it to shrink. The cracks possess a sort of rough regularity, the mud being cracked in polygons with sharp elbows and angles at every turn of the network. The course of the rivers might be almost termed eccen-



LAKE PAZ.

tric, so different is it from the curve and flow of the lines of ordinary watercourse. The phenomena of "cutting back" and of "capture" (that is, of rivers working backwards into the basins forming the rightful possession of other rivers, and thus "capturing" a large area of new drainage to themselves) is so common as to be almost universal. There is hardly a lake in all this region which now empties itself into the Pacific which did not at one time or another drain to the Atlantic. The modern lakes

are nothing but the remnants of comparatively modern glaciers—as they are on the Pamirs, in Tibet, in the Himalaya, and elsewhere—and the process of desiccation is plainly visible in them all. They are all diminishing; but the most interesting feature about them perhaps is the extraordinary evidence which they afford of a comparatively recent upheaval which, combined with the formation of glacial moraines, has upset the primæval hydrography and produced sudden changes of level along all this eastern zone of depression. The straight lines of terraces bordering them (each terrace a lake bottom in its own period) rising like the steps of a staircase five or six at a time up the slopes of the adjoining hills, is a natural feature more clearly marked in the Patagonian Andes than I have ever seen it elsewhere. Originally sea-water inlets with an Atlantic connection, then glaciers, then lakes, probably glaciers again, then renewed lakes—what is their final destiny? Are they all to disappear? I have seen a recently desiccated country with the yet standing evidences of withered forests amid the scattered remnants of irrigation works of very ancient (but none the less effective) fashion; I have traced the lines of broken revetment which marked the partitions of a once well-watered land now desolate, sun-baked, sand-wasted and bare; and of all the many changes that can overtake this changeful earth (where we no longer regard even the mountains as “everlasting”), surely nothing can be more terribly adverse to the interests of the human race than the calamity of desiccation.

It is not necessary to enter into the earlier history of the dispute which after lasting forty years culminated in the treaty of 1881, when Chile was just recovering from the exhausting effects of her war with Peru. This treaty was designed to carry into fulfilment certain articles of a previous treaty in 1856, which bound both parties to acknowledge as boundaries of their respective

territories those which they possessed as such at the time of separating from the Spanish dominion in 1810. The terms of the treaty, in so far as they refer to that part of the boundary which has recently been the subject of the King's Award, appear simple enough at first sight. "The frontier line shall run in that extent (or, through that part) over the highest summits (or, most elevated crests) of the said Cordilleras which divide (or, which may divide) the waters, and shall pass between the slopes which



VALLEY OF RIO PICO.

descend to one side and the other (or, "between the sources flowing down on either side"). Then follows a clause which admits the possibility of geographical configuration which may lead to discussion, and provides for an amicable settlement in such a contingency by reference to two experts.

It is not, however, difficult to see that a definition such as this when applied to a tract of country such as I have described might present difficulties. No sooner were the first tentative explorations undertaken with a view of locating the line than it was found that it would

be most difficult to reconcile conflicting opinions as to the application of the terms of the treaty to the existing facts of nature, and vigorous measures were taken on both sides to secure a more special knowledge of this confirmation in support of the opinions and views of the rival experts. Meanwhile, the long section of the Andes north of Patagonia, which presented no conditions of structure so irreconcilable with the terms of the treaty, was traversed by demarcating parties who made rapid progress in the erection of pillars. Here, indeed, the fundamental condition of identity between the "highest crest" and the "water parting" (or "divide," as it is called in North America) existed in full force, and no ground for dispute presented itself, the "main range" of the Andes being exceptionally well adapted by position and structure for an international boundary. It was the divergence of these two essential conditions in Patagonia which imperilled the peace of South America. The Patagonian rivers were found to flow from east to west right athwart, or transverse to, the general trend of the Andine mountain system from north to south. They were found to break across the great mountain masses and to intersperse wide valleys, across which the boundary must either be carried from one mass of peaks to the next, or else be made to skirt the indefinite edge of cordillera and pampas where the two insensibly combine, and where these rivers rise. A very little examination proved the incompatibility of "highest crests" with "water parting" as a fixed principle of demarcation in these parts.

However, in order to clear the atmosphere and render the meaning of the terms of the treaty quite distinct, a protocol was added in 1893. Then on the 1st May, 1893, in the city of Santiago, "Senor Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and the Minister of War and Marine, Senor Isidoro Errazuriz, in his character of Plenipoten-

ary *ad hoc*, having met in the Department of Foreign Affairs, after having considered the present state of the work of the experts entrusted with the demarcation of the delimitation between the Argentine Republic and Chile, in accordance with the boundary treaty of 1881, and animated by the desire of removing the difficulties which have embarrassed, or might embarrass, them in



HEAD OF PICO RIVER. [Don Carlos Bruch.

the fulfilment of their commission, and of establishing between both States a complete and cordial understanding in harmony with the antecedents of brotherhood and glory common to both, and with the ardent wishes of public opinion on either side of the Andes have agreed as follows."

Then follows the text of the protocol, the general effect of which was to repeat the conditions of the treaty of

1881. In rather elaborate terms it defines the nature of the water parting, or divide, which is to carry the boundary, and at the same time repeats "the line of the most elevated crests of the cordillera of the Andes," or 'main chain of the Andes,' as its determining feature. The possibility of questions arising which would require expert opinion is again recognised.

On the basis of this treaty and protocol Argentina claimed the main range as the true and correct interpretation of the boundary, inasmuch as the mountain masses were far more dominating in their character—more rugged and inaccessible, and generally of greater altitude towards the western flank of the Cordillera of Patagonia than on the eastern, and, in spite of numerous breaks which destroyed their continuity as a meridional chain, they did, through certain sections, mass themselves in very convenient form for the formation of a strong natural barrier. Chile, on the other hand, adhered to the theory of the "*divortium aquarum*," or main line of water parting between the Atlantic and the Pacific. This, said certain Chilean geographers, was the great natural division answering to the general principle which has governed the boundary delimitation in the Northern Andes, and they further maintained that so well-defined a natural feature required no elaborate mapping for illustration. It had but to be identified, and the process of demarcation would follow in easy sequence.

Now that the boundary dispute between the two South American republics has been happily terminated by the King's Award, I may perhaps be permitted to refer to this dispute in illustration of my views as to the inseparability of geographical knowledge (*i.e.*, the knowledge of technical geographical conditions) from the framing of the terms of a boundary agreement, if the agreement possesses any geographical basis at all. In this instance (as in the more recent instance of the Alaska boundary)

the actual text of the treaty admits of divergent interpretations. The opposing views are comparatively simple. They have been briefly stated, and it is hardly necessary to enter into all the mass of legal and technical arguments which have been put forward on their support in the voluminous evidence which has been published. On one side the claim was for the "divortium aquarum," the continental water parting, and that only. On the other, for the "main range," the line of highest peaks,



NEAR HEAD OF PICO RIVER. [*Don Carlos Bruch.*

independent of its continuity as a water parting. Here, then, the text of the treaty was adapted to support either claim (or neither) for the statesmanlike provision for an appeal to expert umpires in case of doubtful geographical conformation (*i.e.*, a bifurcation of the feature which represented the boundary) practically met the situation. In the strict technical sense of the term neither a main range nor a continental water-parting can bifurcate, which is in itself an indication that the treaty makers wisely regarded neither the one nor the other as a fixed and inalienable principle of the boundary. Unfortu-

nately, expert opinion did not agree, and thus arose some of the most interesting discussions on general topographical issues which have ever been maintained in any country. As in the Alaskan case, so in the Patagonian, the effect of this divergence of opinion was to render arbitral decision dependent chiefly on the consideration of the spirit of the treaty rather than its text. Here we need not follow it, but we may examine some of the geographical issues raised during the progress of the discussion. Amongst these the question of the "*divortium aquarum*," or continental water-parting, is most interesting. In a purely academic and abstract sense is it possible to assume that any general or continental water parting must necessarily exist? An elementary knowledge of the geography of the world at large hardly supports the assumption. There are great lake regions which possess no known outlet. They are self-contained, and occupying vast spaces of the continental surface, in its midst, they absolutely destroy any theory of a general continental "*divide*." Where, and what, is the northern water-parting of India? No man can tell. It is good enough for India that her northern boundary is a magnificent series of snow-capped ranges, divided by the passage of great rivers which gather up their affluents from unmapped regions. Tibet, which lies to the north of India, is patched with desiccating lakes, the relics of a long past glacial period; and through its midst, dividing the waters of India from the waters of Chinese Turkestan, there is no known "*divortium aquarum*." Central Patagonia is also a land of lakes—of desiccating post-glacial lakes, but they have (with few exceptions) always discharged their surplus waters either in one direction or the other, changing direction through geological ages from time to time. There are some very remarkable features about the Patagonian divide disclosed by recent investigation. There are small lakes and marshes dis-

charging in both directions; there are glaciers sitting astride the "divortium"; and there is one (and perhaps the most remarkable feature of all) where a river for some thirty miles of its course contains the actual water-parting of the continent. But, as I have said, in this instance the treaty itself provides for such contingencies indirectly when it contemplates expert arbitration. Disagreement between the experts was, of course, not contemplated. It was impossible that it should be.

We may also ask (as another question arising from this discussion) what in future is to be the significance of the geographical term "main range." It is clear, of course, that no "main range" can bifurcate and continue to be a main range. But how far may it be split asunder by the passage of rivers and continue to maintain its geographical distinction? This is another question which requires the careful consideration of geographers, and it is only one out of many that want authoritative definition such as may serve for permanent reference in the case of application to political agreements and treaties. Every boundary treaty that has of late years given rise to arbitration has contained some geographical reference of which the interpretation is vague and unsatisfactory. The Royal Geographical Society of London has the subject of geographical terminology under its earnest consideration, and it is to be hoped that eminent geographers of all nationalities will lend their assistance to the compilation of a work which (incomplete as it is bound to be in the first instance) may finally serve to dispel some of the uncertainties which beset the treaty-maker who relies on a geographical basis for his definition of a boundary. Geographical considerations have been referred to here only in order to point the moral of this the most interesting boundary question of modern times, *i.e.*, the inseparable connection between boundary agreements and practical geographical knowledge. Had com-

plete maps of Patagonia been before the original treaty-makers, who can doubt that the agreement would have been clear and precise in detail leaving little room for local discussion? Until these maps were made it was no more possible for a British Tribunal to lay down a clear and precise decision than for the original treaty makers. A few thousand pounds spent on scientific geographical surveying would have saved a few millions spent in armament and ships.

Technical discussion between the experts was gradually permitted to assume the phase of an international dispute affecting the honour of the two States, and gave rise to much violent political agitation. The longer it lasted the more perilous did the situation become, until at last there was imminent danger of an ultimate appeal to arms. Had war been declared between the republics it is absurd to suppose that the question of a few hundreds of square leagues of mountain territory would have been regarded as anything more than a mere pretence on which to hang the issues of a fight to the bitter end for supremacy in southern South America. Great as are the possibilities of development which lie in the Andine slopes within the limits of the disputed area, there is nothing which could justify a fight for their possession such as this would have been. It is idle to speculate on what might have been all the results of such a war. One result, however, seems certain. The exhaustion consequent on the struggle (no matter how it ended) and the terrible financial collapse which must have ensued, would have reduced both countries to a position of second-rate importance amongst the States of South America very different to that which they now enjoy. It would have taken many years to recover from the effects of such a war, to regain the confidence of Europe, and to reopen all the old avenues of progress and prosperity which have, within the last half century,

placed Argentina high amongst the commercial nations of the world, and may yet transform Chile in a fashion, and to an extent, which no one so far appears to have contemplated. However, the appeal to "antecedents of brotherhood and glory common to both" and the counsels of common-sense finally prevailed, and it was resolved to appeal to arbitration, and thus to remove the great in-



STUDYING THE MAP. [Don Carlos Bruch.

centive to perpetual international disagreement which lay in an unsettled boundary.

Let us estimate such a decision at its true worth. England is not altogether popular in South America, although English institutions are occasionally imitated and English methods inculcated. Nevertheless, English methods are still the criterion of fair play and honest dealing amongst South Americans, and they were but

following what Englishmen may be proud to remember is a traditional instinct, when they resolved to appeal to British arbitration for the settlement of their differences. It was the resolve to appeal to arbitration rather than to arms which marks a new era in the history of South American republics and places both States in a higher moral position amongst the nations of the world than the most successful war could have possibly attained for them. Argentina and Chile have read a lesson to all nations. There is no faintness of heart about these two countries. Keen soldiers are to be found on both sides of the Andes ; men who believe as thoroughly in the arbitration of the sword as ever did Crusaders of old ; men who are almost recklessly ready to shed their blood even for a political ideal. Year after year had seen careful and well-considered preparations made for war—arsenals had been stocked, commissariat depôts filled, regiments raised, conscripts* called in and shaped in an incredibly short space of time into passable cavalry and excellent mounted infantry ; ships had been bought and armed with all the latest engines of destruction. On one side, at least, was there a navy that had made its record, secured its traditions, and knew what fighting meant ; and on the other was an opposition navy, not only ready, but anxious, to make a rival record. And all this was to be thrown over—armies reduced, ships sold, all the chances and opportunities of a well-matured fight abandoned—and for this there was to be substituted a simple appeal to a British Tribunal. Never perhaps in the history of the world (certainly never in the history of South America) was there a more conspicuous triumph of reason and good sense over human passion and ambition ! Never had any three countries more just reason for pride and self-congratulation than these three—Argentina,

* Conscription was only sanctioned in Argentina by a law passed late in 1901.

Chile, and England : England for the undying compliment paid to her traditional honesty of purpose ; Chile and Argentina for the remarkable exhibition of national self-control and large-minded statesmanship (so different to the intricacies of seething provincial faction which often mark South American politics) which led them to abandon all their high military resolves and naval pretensions in favour of a policy of peace and goodwill, of material prosperity and financial honesty.

But the appeal to British arbitration which was accepted by England some four or five years ago was not one which could be responded to without very careful consideration of all those conflicting details which had exercised the minds of lawyers and geographers in South America for half a century. The tribunal appointed to consider the question at once called for evidence and for maps—and then followed a long period of inaction which, in the heated state of South American political atmosphere, was exceedingly dangerous. The evidence produced was voluminous. It almost amounts in extent to a small library ; but such evidence as can be presented by books and photographs is not in itself sufficient to ensure the solution of difficulties which are based on geographical misconception. The constant repetition of arguments founded on the same original ambiguities in legal phraseology leads to no very satisfactory results. But the production and publication of all these documents relating to the boundary question on both sides was absolutely necessary. During the time that these publications were in the hands of their editors the work of topography (detail surveys) was being pushed forward with energy and skill. Well-trained topographers were engaged from Continental schools to assist the Argentine engineers, and the result was the gradual attainment of a large amount of geographical mapping of the disputed area, which not only served the immediate

(and most necessary) purpose of illustrating the geographical intricacies which surrounded a temporary dispute, but which will serve for all time as an excellent basis of those future developments—road-making, railways, irrigation works and telegraphs—which will assuredly follow. For three years the process of amassing evidence continued—and then supervened another crisis.

One of the most delicate problems connected with the possibility of occupation of the Andine tracts which lay between the two boundaries claimed on one side and the other as the rightful lines of delimitation was the problem of communication. How was Chile to take effective possession of territory to which she had no roads, and to which it seemed possible that no roads could readily be made? The western ranges of the Patagonian Andes, irregular in formation, here rising to rugged snow-capped peaks and glaciers, there descending to flat-backed summits where swamps and marshes are by no means uncommon, are all alike in one respect. They are densely forest-clad up to the limits of vegetable existence. The dense forests of Patagonian beech and other analogous trees are interlaced by an almost impenetrable growth of a species of dwarf bamboo which defies the road-maker, and leaves nothing but the open spaces of the rivers as possible lines of advance eastward from the coast. Into this forest mass it is frequently impossible to penetrate, not only on account of the dense phalanx of bamboo undergrowth and the varied obstructions presented by rotten and fallen trees, but by reason also of the swamps in which this jungle flourishes. A treacherous form of deep, soft, peaty moss sometimes leads to the illusion that there may be firm foothold beneath the wild tangle of the forest trees. Near the coast this appearance is almost invariably delusive; but as one proceeds further inland the solidity of the soil strengthens, and dry land

at last appears. But for many miles from the mouths of the great rivers of Patagonia, where these rivers join salt water, there is no possibility of landing on the tree-covered shore, or of making a track along the banks. The rivers themselves come sliding and swirling out of the mountains in great broad silt-filled channels streaked with red and purple alluvium, their flat, shining surfaces broken here and there with small whirlpools, or caught up into frills by projecting snags and eddying sideways into backwaters under the big-leaved "pangue." They are big, rapid and dangerous, and they pile up silt at their base (where the salt water meets the fresh) until it is only at considerable risk that even a steam launch can be taken across the bar. Yet these rivers (as will be hereafter described) form the highways of communication from the Pacific coast eastward, and it is along their banks, at such distance from the sea as solid ground may be encountered, that the only available roads for Chilean traffic can be made to exist. For some distance from the coast the usual condition of the flat land surface skirting the western foothills appears to be one of instability; but once past the humid, vapour-filled region of the coast the forests gradually thin out and the way becomes firm, if not plain. For many miles the forest track has often to be hewn through a dense mass of the dwarf bamboo (*coligüe*) which is a powerful barrier to rapid progress, though it frequently indicates the presence of a rich and profitable soil. This bamboo is usually regarded as a good omen in spite of its toughness, and it is in the side valleys leading down to the main stream, where the *coligüe* grows, that the engineers say they hope for the best results ultimately. The grass lands on the eastern edge of the Cordillera are often free from forest, and here road making is easy enough but for the ever prevalent tucu-tucu.

These roads were partially opened up while the

boundary question was still pending, leading to further political complications.

Then it was that the necessity of a British Commission on the spot was recognised, a Commission which should see for itself the actual geographical conditions of the Patagonian Andes, and judge how far their actual conformation might be reconciled with the theories of the treaty makers ; comparing step by step the claims of the rival experts, and estimating the relative value of the features on which these claims were based ; a Commission which meanwhile would be a guarantee for the preservation of peace on the borders, so long at least as it was actually employed there. The surveys were not quite as fully advanced as might have been desirable. But a great deal had been done, and with the assistance of that which was already in hand it was estimated that possibly a fairly complete examination of the whole area in dispute might be accomplished within the limits of a single Patagonian summer or autumn. The summer was, indeed, already over when this decision was announced, and there remained but two or (with luck) three open autumn months in which to examine 800 miles of linear geography in one of the roughest regions of the world. The possibility of completing this examination depended entirely on the cordial goodwill and support of the expedition by the two governments concerned. If they were really anxious to arrive at a peaceful settlement of the dispute the enterprise had a chance to be successful, because due arrangements for preparing the way could be made beforehand with the help of the telegraph. That they were really anxious results have proved. Due arrangements were made. Thus it came to pass that a British Commission which included one member of the Tribunal of Arbitration (now acting in the name of the King) and four officers experienced either as surveyors or explorers, all of whom had graduated in Asia¹ or

Africa,* were dispatched to South America on the 31st January, 1902, to assist as well as they might towards the solution of the thorny problems which interlaced themselves round this international boundary dispute.

* The Commission included Colonel Sir T. H. Holdich, R.E., in command; Captain C. L. Robertson, R.E., Assistant Commissioner; Captain B. Dickson, R.A., Assistant Commissioner; Captain W. Thompson, R.E., Assistant Commissioner; Lieutenant H. A. Holdich, I.A., Secretary.

CHAPTER III.

BUENOS AIRES, ITS PEOPLE AND INDUSTRIES.

WHAT did you think of Venezuela ? is the question which has greeted me more often than not from friends on my return from Argentina. It is as if one should be questioned about Italy on return from Siberia, and it not inaptly represents popular knowledge of South American geography in England. South America is full of surprises, but of all the surprises which await the traveller in that but half-developed continent, the city of Buenos Aires is the greatest.

The prevailing impression of South American physiography is one of immense forests—forests into which the sun can with difficulty introduce a glimpse of daylight ; where gigantic creepers festoon orchid-covered trees, and monkeys and parrots mock from the branches the creeping things below. This is really true of a great part of South America--of a part which pertains to the basin of the Amazon. But alternating with these immense stretches of low forest-covered land, there are now known to be wide grass uplands altogether free from forest, even in the basin of the Amazon ; and in the rugged mountain regions of the west and the north, where the Amazon and the Orinoco collect their rising affluents, there are magnificent highlands, cool, bracing climates, and occasionally great dreary wastes of elevated plateau where vegetation is not seen, and where the traveller may perish of thirst if he does not know his way from one small patch of oasis to the next.



GENERAL JULIO A. ROCA, PRESIDENT OF THE ARGENTINE REPUBLIC.

Civilization is much centralized in South America. It is found, like the oases, in patches, and immense areas of forest and mountain, full of vague possibilities of enormous wealth, still separate the little centres of social and material development by thousands of impassable miles. South of the basin of the Amazon, in the arms of the Paraná and her sister rivers, forest gives way to pampas. There is little forest land in Southern South America east of the Andes. Farther south again, in Patagonia, where the local rivers run from the Andes to the Atlantic on those shelving slopes of marine deposit to which I have already referred, we are in a land which is almost bare of vegetation, and almost arctic in its vicissitudes of climate.

The centres of South American civilization (of which Buenos Aires is one, and undoubtedly the greatest) are being gradually linked up in the south by road and rail, and inter-communication is becoming almost European in its frequency. Consequently it is in the south of the continent that the greatest advance has been made, and the greatest promise exists of rapid development in the near future.

The Southern States are not in more direct touch with Europe than are the Northern ; but they enjoy far more of the advantages of a European climate and of the physical advantages of European regions. There is therefore a greater attraction for European colonists, and, as in all the new countries of this half-developed world, it is the colonist who makes the country in the first instance, we find that Argentina and Chile, the two most Southern States of South America, stand altogether apart from the central and northern republics in their position as promising aspirants for future rank and influence amongst the nations of the world. The Englishman at home thinks of South America as a whole, and he regards South American methods of administration with a certain amount of

caution. He recognises nothing but a political atmosphere of revolution, and of analogous political methods, and he naturally lumps all South American States together in one comprehensive sweep of political condemnation. But it seems possible that the nineteenth century has seen the end of faction fighting in some of these Southern States. Chile and Argentina appear already to possess a sound public opinion, and it is an opinion strong enough, and may be lasting enough, to condemn revolutions as anachronisms and to tolerate any form of administration which does not hinder the progress of national development. They have too much to lose to favour the spoiler and revolutionist. The more a country progresses in matters of material prosperity, the more visible hostages, in the shape of substantial cities and public works, she gives for the maintenance of peace and order within her own borders; and it is from this point of view that the city of Buenos Aires strikes one as a surprise. For, after all, it is not so very long ago that Argentina was seething in a turmoil of revolutionary reaction, and the very cause and origin of that latest scene of civil bloodshed and political chaos (when all the angry passions which the lunacy of party politics sets loose in South American republics surged and swelled to the overthrow of the Juaréz Celman administration) was that self-same administration which made Buenos Aires what it is. There is no other colonial city like it, no other South American city to compare with it. Rio de Janeiro, with its magnificent mountain entourage; its harbour, which for loveliness of scenery far surpasses any harbour that I have seen (my experiences do not include Australia); its stately and picturesque Spanish streets and general air of old-world and faded splendour, is very typical of the State of which it is the capital. Since the dignified old Emperor Pedro stepped down from his throne to make way for the republic, Brazil has retrograded step by step. This is frankly ad-

mitted by Brazilians themselves, although they would not have the Empire back. With magnificent possessions of as yet undeveloped natural resources, and a rich heritage of splendid possibilities, the material prosperity, the credit, and the respectability of Brazil has rather diminished than increased. Some of these national assets departed with the Empire, and Rio de Janeiro bears witness to a general downward tendency. It is written largely and plainly all over its dilapidated palaces and evil-smelling boulevards. Buenos Aires is now undoubtedly the capital of South America by right of its position, its wealth, its population and its magnificence. The fault of it is that it is too large. Nearly one-fifth of the population of Argentina is to be found condensed in Buenos Aires, and much of it is urgently wanted elsewhere. Whatever may have been the iniquities of the Juarez Celman Government, which lasted from 1886 to 1890—those economical and financial errors, which produced first a magnificent boom and then almost universal destitution—Buenos Aires owes much to that régime for her present stage of modern development, a development which places her far beyond the ordinary colonial town, and not very far behind some of the leading capitals of Europe. It is the boast of her citizens that Buenos Aires is the second greatest Latin city in the world (Paris ranking first), and the boast is justified by more than mere population or the space covered by streets and suburbs.

The story of the early days of Buenos Aires has already been faintly sketched. A rich Spaniard, one Pedro de Mendoza, founded the city in 1535. It was then called Santissima Trinidad, and the port only was known as Santa Maria de Buenos Aires. But the Indians of the sixteenth century finally forced Mendoza from his position. It was not till 1580 that Juan de Garay re-founded Buenos Aires under its present name. For more than two centuries and a half the growth of the city has

been gradual. It has survived all the vicissitudes of early colonization, and lived to complete in another half its destiny as the most magnificent and the most "up to date" of all the cities of South America. It is not a new growth, an upstart, like many of the mushroom cities of North America. It possesses a history and the respectability which belongs of right to a town owning stirring traditions lasting through centuries. As a town, it belongs to a fine old world aristocracy, and the same air of former distinction which pervades Rio de Janeiro is perceptible in Buenos Aires, undestroyed, uncontaminated even, by the busy chaos of telephone wires, electric tram constructions, and other accessories of modern civilization which enclose it as in an iron network. Buenos Aires was created a colony under the Viceroy of Peru in 1620, and increased so rapidly in population and wealth as to attract the attention of the Portuguese, who endeavoured to annex it to their own possessions. They were actually assisted by the British, but the combination effected little against the generalship of the Spanish General, Zeballos. Eventually peace was secured by the despatch of a second expedition from Spain, which ended in the capture of all the Portuguese forts in the island of Santa Catalina and the reduction of Sacramento.

In 1766 the Spanish Government founded a Vice-royalty, with Buenos Aires as capital. Zeballos was created first Viceroy by a Royal Cedula dated August 2nd, 1776. In this Vice-royalty were included certain provincial governments which now comprise the territories known as Argentina, Uruguay, Paraguay and a part of Bolivia. I have already referred to the occupation of Buenos Aires by the British in 1806, and the subsequent failure of the attempt to wipe out the effects of the capitulation of the British force. England's connection with the history of Buenos Aires is not one which confers much lustre on her flag ; but England's influence in the field of diplomacy has

nevertheless had much to say to the position of independence which is now enjoyed by the Argentine Republic, and is gratefully recognised by her people.

In the year 1833 Darwin reckoned the population of Buenos Aires to be about 60,000 souls, and the city itself could not then have varied greatly from the description given of it by Sir Francis Head (a captain of Engineers who had been sent to South America to report on certain mines) a few years previously. Those were days when all journeys had to be made on horseback ; when there was no way leading out of the city but such as might be indicated by the tracks of previous riders ; when a traveller's chief assets were his saddle and his spurs. Sir Francis Head's vivid description of the backward condition of Buenos Aires in his time is such as would not now apply even to the very remotest settlements of South America. The smaller " towns " of seventy-five years ago would not be recognised in these days as towns at all. Seventy-five years ago Sir Francis Head rode into San Luis and was obliged to ask where the town was ! The few miserable shanties which lined the wretched mud-filled street did not appear to him to constitute enough of a town to answer to the name. The San Luis of to-day is the capital of a province which numbers more than 80,000 inhabitants, and, with a population of over 10,000, it possesses a municipality which is said to expend over 100,000 dollars per annum. Buenos Aires at the same period was a city of ill-constructed and only partially watertight houses bordering streets of no construction at all—unpaved, undrained and unlighted ; unsafe too at night, when all kinds of villainies could be perpetrated in the dark corners of it. Food was scarce and bad. The public sham-ble was one of the sights of the town, and there bullocks were lassoed and massacred after the fashion still practised by the gaucho of the pampas. No one who has read it will soon forget the gruesome account given by

Sir Francis Head of his "assistance" at a funeral, when he was tempted to steal back again to the cemetery after the ceremony (such as it was) was over, in order to give a little more effectual covering to the corpse! Men may yet live who recollect those days and who have watched the progress of development, gradual at first, but suddenly quickening with a dangerous rush, which has resulted in the Buenos Aires of to-day.

It is a city of straight streets set at right angles, dividing up the town into blocks or squares of almost regular size and pattern, convenient for numbering and for reference, but wanting in local variety. Through the midst of the city runs the main boulevard, or avenue, the Avenida de Mayo. This was cut out of the city by a process of demolition in the days of the great Argentine boom, and was enormously costly. But the Avenida de Mayo stamps the city with an European hall-mark, and at once lifts it beyond the colonial phase of architectural pretensions. It affords a magnificent vista of handsome buildings bordering a wide roadway, with lines of trees shading the broad pavements; a splendid central array of electric lighting which illuminates well-appointed shops and pretentious hotels, and lights up the crowd of well turned out equipages which eternally traverse the roadway, as yet unspoiled by trams. There are few streets to compare with it either in Paris or in London. At the end of it nearest the River La Plata is the Plaza de Mayo, with a few fine statues facing the red pile of Government buildings overlooking the docks and the river. Parallel to the Avenida de Mayo are some thirty streets, on one side or the other, which distinctly gain in social importance as they close in on the great central avenue. Buenos Aires was first planned on the old Spanish principle of narrow streets, with lofty houses on either side to secure the very necessary shade without which they

would be unbearable in summer. They are consequently mostly about the same width, which has long become too narrow for the immense traffic which they maintain. Tramways occupy nearly half of the roadway in many of the principal streets, leaving the Avenida de Mayo, the Calle Callao, Santa Fé and some others as the only really roomy highways in the city, if we except the Paseo de Julio, which flanks the railway and the river. This is the great defect in the construction of the city. The pavements in the minor streets are narrow, progression is slow, and everything has to give way to the eternal tram. However, it is impossible to rebuild a whole city, and the municipality have adopted a remedy which is already partially adopted by the City Council in London. Traffic in certain streets is only permitted to circulate in one direction.

In spite of the narrowness of the streets, and the consequent want of space and perspective with which to view the showy attractions of the shop windows, there is no failure in attention to this form of seduction. It is evidently an art that appeals strongly to Argentine imagination. Nowhere (except in Paris) have I seen more artistic effects than the ingenious shop decorators of Buenos Aires succeed in effecting, and that generally with very simple means. Not even Bond Street can compare with Florida for effective arrangements designed to entrap money out of the pockets of the unwary. Florida, perhaps, socially centres that half of the streets of Buenos Aires which run at right angles to the Avenida, continuing on the far side under new names—which always seems to lead to confusion. But Florida is not locally central, being comparatively near to the river. It is a curious fact that all the main streets of Buenos Aires, crossing each other directly, seem to terminate on the river. This is because the tide of social traffic

usually sets towards the north-east or the north-west—to Government House or to Palermo—and the river curving slightly on its banks covers the whole northern flank of the town. Thus, down the narrow vista formed by tall houses casting deep shadows athwart the street, one's eye is ever arrested by what sometimes looks like a solid red bank with a purple glint as of vegetation stretching across the horizon, and rising to a strong sky-line. The impression of solidity which the great sliding mass of red water conveys is most remarkable, and the slight grade of the street towards the river is sufficient to give the latter the up-hill appearance which is so curiously delusive.

The public buildings of Buenos Aires are innumerable and they are magnificent. Even the private residences of the many wealthy land-owners, who love the town more than the country, are palaces. Stately edifices, with wide and noble porticos leading to tessellated courtyards surrounded with marble corridors and balustrades, with glimpses of a central "patio" where tropical plants blend together to afford a welcome shade from the mid-day heat, are all around you as you walk the streets. Perhaps the most striking feature of the more modest street mansions, which present no very effective appearance from the point of view of the pavement, is the beauty of the wood-carving which appears on the doors. If Buenos Aires is ever celebrated in art history it should be for its wood-carving. The Bolsa (Exchange) is always quoted as one of the most magnificent of the many public buildings which decorate Buenos Aires; but for sheer extravagant luxury in decorative material and design the Jockey Club appears to me to be unrivalled. It is the focus of Buenos Aires fashionable life, the centre of Argentine sport and play, and is said to be the richest club in Argentina. The ordinary house of the ordinary citizen usually follows the old

Spanish style of architecture, although some effort is now being made to introduce a style more suited to the comparatively temperate climate of Argentina. These houses are flat-roofed, one-storeyed, with a "patio" or open courtyard in the centre. The bed-rooms range round the enclosing wings, the sitting or reception rooms of the house usually being near the entrance or opposite to it. Thus it not infrequently happens that in order to reach, say, the dining-room from the drawing-room, it is necessary to pass through a whole suite of bed-rooms, or else to walk through the open patio—a proceeding which is unpleasant in wet weather. But there is always light and air about an Argentine interior, and even the hotels are seldom deficient in this respect. About Argentine hotels so many verdicts have been given at intervals, and so many of these verdicts have been uncomplimentary, that I shall not hesitate to say that I never was more comfortable in my life than in the Buenos Aires hotels, and never better fed. Of course I was likely to be well found in the matter of accommodation at the hands of a government which is never wanting in generous liberality, and which welcomed the British Commission as national guests. I am not, therefore, a sound judge of these things; but it did nevertheless strike me that there must have been great improvement in hotel accommodation during the last four or five years. Even those critics who have condemned the accommodation and the hotel arrangements of Buenos Aires have always admitted that their cuisine was excellent. When those renovations and improvements were in progress which have so changed the city within the last twenty years, giving it wood and asphalte paving and magnificent electric lighting, a drainage system was added, at a heavy cost to the municipality, which has placed Buenos Aires in the front rank of the wholesome cities

of the world. The eye of the artist was not wanting to embrace the whole and to ensure that the public places should not be merely a refuge for the idle and the destitute, but a joy to those who look for taste and beauty wherever natural conditions of soil and climate render beauty easily attainable. The Plazas and the Parks, the Recoleta and Palermo, are all laid out by a skilled hand guided by an artistic eye. And the result is that Buenos Aires is one of the most fascinating cities of the world to the idler. No more perfect drive exists anywhere than the long, palm-bordered drive to Palermo, where the broad roadway is occasionally packed so full of carriages and riders as to render progress at anything but a foot's pace impossible. Fashionable Buenos Aires, at the fashionable hour, circulates chiefly about the Florida, or drifts slowly to the north-west in the direction of Palermo. It is here that one meets all the most effective dandies and the best-dressed women of the town, and the beauty of the gardens which stretch away on either side of the road, the attractions of the racecourse, and of certain sporting accessories, are quite sufficient to justify the popularity of this society migration. Added to other advantages the lighting arrangements by electricity are perfect. Whether by night or by day Palermo and the way thither always remain two of the great fascinations of the town. Beyond Palermo some four or five miles away from the city is the suburb of Belgrano. There is much in Belgrano to remind one of Italy. The tall black cypresses, the discoloured and weather-stained red and yellow walls of some of the older places, the creeping plants which cluster on them and hang out their brightest flowers over the copings, the quaint architecture of some of the smarter residences (which are not old at all, but brand new) and the general air of peaceful vegetating idleness are as Italian as are the workmen

that one meets in the road, or finds employed in the docks and water-works.

Italians are in great force in Buenos Aires. Out of the 800,000 inhabitants of the city some 300,000 are Italian. But it is very difficult to determine the proportion between the floating foreign population and the permanent colonists. Italians, Spaniards and Basques all swarm to the country for the harvesting. They fill up the steamers running between the Mediterranean, Vigo, and South America, and they return by the same route when the harvesting is over with pockets full of coin and a happy prospect of many months of idleness under their own vines and fig-trees. The harvest crowd returning to Vigo in a Royal Mail steamer is a source of perpetual interest. Men and women arrange themselves in picturesque but untidy groups about the lower deck, and they flirt and gamble the time away with infinite patience and a general disregard to the vicissitudes of weather, until it is time to transfer themselves and their enormous boxes and bundles (they travel on no reduced scale) to the shoreward end of the railway which takes them home. Italians are frugal, and they are good workmen. They eat little and spend nothing. So long as an Italian can get his bottle of wine a day, and occasional standing room in the gallery at the Opera, he is content. The latter luxury, the music-loving Italian (keenest of all musical critics in the world) will never forego. A well-known and wealthy resident of Buenos Aires told me that he had in his establishment an Italian cook who had served him for sixteen years. His only weakness was a passion for music, and this led to his periodic absence whenever a special performance took place at the Opera. On such occasions an inferior chef had to be engaged to take his place. But frugal and industrious as the Italian may be (and he is an important factor in Argentine economy) he is

not always a good colonist. He has not that sort of physical energy which will lead him into fresh fields to develop a new place for himself in a new world. He prefers old ways and methods. He will take up shop-keeping in a town or "run" a small hotel or restaurant, but he will not (as a rule) turn his hand to colonial country life farther than to assist in gathering a harvest with the sowing and growing of which he may have had nothing to do. It is this idiosyncrasy of the Italian which is perhaps the chief source of his weakness in colonial schemes. Argentina (like North America) favours no irruption of those undesirable classes who are shifted on from country to country as unprofitable members of society, whose room is always preferable to their company, until, in good time, they are dumped down in that general refuge for the destitute—England. But the supply of desirable colonists, although considerable, is not equal to the demand. Argentina cannot choose. The rapid increase of Argentine material prosperity and wealth, creating an ever-increasing demand for foreign labour, will necessitate the adoption of every means of meeting that demand by the importation of competent workmen of any nationality for many years to come.

The increase in the population of Buenos Aires may be accepted as some measure of its increase in material prosperity. Between 1870 and 1902 its population increased from 180,000 to 800,000, and its streets and houses lengthened and spread until there remained but three cities in the world (London, Marseilles and Manchester) which cover a larger area. In the matter of population it stands tenth on the world's list, and far ahead of any colonial city. Too many of the five million souls who compose the entire population of Argentina have crowded into Buenos Aires. With an enormous area of undeveloped (almost unexplored)

country beyond, a "hinterland" of magnificent promise, thousands whose hands and heads should be employed in making Argentina are crowding Buenos Aires to the verge of suffocation, struggling to earn a living within sight of its streets, starving in a country where starvation should be impossible, swelling the ranks of that human sediment which in England is generally classed under the head of the "submerged tenth." There is a back door to the town which is called the Boca. Here swarm the submerged units of this cosmopolitan society, living (or existing) in an atmosphere of squalid poverty. The Boca is the old town. Wooden houses of the old pattern on piles set in the river mud still exist in the Boca. Irregular and overcrowded streets and all the picturesque attributes of a decomposing suburb are to be found a little to the south of the docks by anyone who wishes to study all the aspects of one of the most remarkable cities of the world.

The docks of Buenos Aires form matter of general interest because to a certain extent they represent the weakness as well as the strength of the city, the disadvantage of its geographical position as a commercial port. The difficulty of access is often quoted as a guarantee for the security of the town in case of war. It would be impossible to bombard Buenos Aires from any point attainable by ships of sufficient capacity to effect a bombardment. But military safety hardly compensates for commercial inconvenience. It was long a standing grievance to the Royal Mail passenger from England to Argentina that he could not land at Buenos Aires, but was forced to leave his ship at the port of La Plata, which is more than an hour's distance by rail from the capital. It is possible for ships with a draught equal to that of the British mail steamers to enter the Buenos Aires docks, but it is (as matters stand at present) doubtful whether they can always leave those docks

again at the advertised hour of departure. The tide may not serve. This, however, is a difficulty which can only be regarded as temporary.* The approach to Buenos Aires from the sea after leaving the coast port of Monte Video is up the broad estuary of the La Plata—an estuary so broad that land cannot be distinguished on the horizon of its wide red shimmering surface. But in all this width it is difficult to find a channel for ocean-going steamers drawing 25 feet. Two channels lead from the river to the port. The North Channel has a maximum low water depth of 23 feet, the South Channel only reaching 22. The port, which is officially divided into “inner” (or Madero) and “outer” (the latter representing the outer roads and channels), comprises two basins besides the docks and the Boca del Riachuelo. The four docks and the basins are protected by a long sea wall of over $3\frac{1}{2}$ miles in length, and they connect one with another. They were only completed in 1900, and it is estimated that they can accommodate twenty million tons of shipping. There are besides two graving docks, the whole forming a really magnificent commercial port which at present absorbs more than half the traffic of Argentina. But the fact remains that the port of La Plata was the more accessible until quite lately.

La Plata is in itself a city of exotic growth for which it is difficult to find a satisfactory *raison d'être*. It is in many respects a remarkable city. The public buildings are magnificent, and the effect when lit up by a perfect system of electric lighting is superb. A modern writer has described it as “a city of palaces, plazas, avenues and parks.” It is better designed and better lighted and embellished even than Buenos Aires. Ten million sterling are said to have been spent over La Plata without touching the port. But it has no trade or industry of its own. No busy traffic fills its wide, grass grown,

* It has already disappeared.

deserted streets. There would be no inhabitants but for Buenos Aires. It is an overflow reservoir for the too abundant business population of the great South American capital, and it exists rather as a suburb—an inconveniently placed suburb—than as the self-sustained capital of one of the richest provinces of Argentina, which it was meant to be. In two or three years this great town sprung up on the borders of a wilderness. It was the offspring of the Argentine boom, and it now forms a magnificent monument to the folly that can beset a people whose heads have been turned by the sudden accession of wealth. Two cities projected on a scale of such magnificence as Buenos Aires and La Plata could hardly exist in such close provincial juxtaposition. Buenos Aires finally established its position as the capital of the Federation, and La Plata has now become a remote suburb with a small population of 65,600 souls; of whom only 27,700 are nominally Argentine and the rest chiefly Italian. Government clerks and their dependants occupy La Plata, and their perpetual movement to and fro supports the Ensenada line of railway between the two places.

There is, however, a feature of peculiar interest about La Plata almost unique in South America. Here there exists a museum illustrating in a very remarkable way the geological history and the economic value of Argentina, especially of that part of the country which has been under dispute. This museum was practically the creation of an enterprising Argentine official—Dr. F. P. Moreno—who is not only well known as the expert employed to maintain the Argentine case for the boundary, but also as a distinguished savant with a reputation which reaches far beyond his own country. The splendid public building which contains the museum, in the centre of the town, has been the

home at one time or another of most of the earliest and most enterprising settlers and travellers in the far South. The search for scientific truth has not infrequently ended in efforts at colonization which have proved more or less successful ; and the scientific world generally is very largely indebted to the enterprise of the museum officials for paleontological discoveries of a nature which have been sometimes almost startling. Walking with Dr. Moreno along the museum corridors lined with the restored effigies of gigantic mammals, or between rows of skeletons standing at attention like a guard of honour, it was quite interesting to observe the personal note of human interest (almost of sympathy) which subsisted between the distinguished director of the museum and some of his fleshless subjects. For this is a scientific ethnographical collection, illustrating certain theories with regard to human development in South America, and including the illustration of many divergent Indian races and some few exceptional connecting links. Friend or foe, it is all the same for illustrative purposes in the interests of science, and the respected remains of some of Dr. Moreno's Indian friends are to be found in weird harmony with his enemies in this field of instruction. Thus did they still assist their learned master to substantiate his anthropological theories in the peaceful retreat of the La Plata museum, even as they assisted him in unearthing the remains of some of their fellow specimens in the days of their flesh.

The waterways about Buenos Aires (which is essentially a city of the sea) will long be subjects of speculation and enterprise. Already the town of Rosario on the Paraná has started her own docks and increased the possibilities of her ocean traffic ; and other river ports will follow her example. All this tends to render more important the facilities for the navigation of the

La Plata from the sea to the confluence of the Tigré and Paraná rivers, and more than one elaborate scheme has been submitted to the Government for improving the La Plata channels. Any project for training the currents of two gigantic rivers in such a way as to ensure their co-operation in the work of scouring out an effective and lasting channel below their confluence with the Paraná must necessarily involve intricate and expensive



LINCOLN EWES. ESTANCIA CHAPADMALAL.

engineering works, with all the risk of ultimate failure which invariably attends such attempts to divert great rivers to a useful end. Nevertheless, this will doubtless be effected in good time, and Buenos Aires will become as approachable as Venice. The great delta land which has been formed between the Paraná and the Tigré rivers (which join the La Plata separately but at no great distance from each other) is almost regarded as a part of Buenos Aires. Into the Tigré there flows a broad,

flat stream called Las Palmas (or Lujan) which runs more or less parallel to the Paraná, leaving a wide space of rich delta between them, intersected by a network of innumerable minor channels and waterways. Some of these are navigable by a steam launch, others are only magnified ditches. Here on a Sunday morning a great part of Buenos Aires society loses itself. There are yacht clubs and rowing clubs, and every species of waterside amusement at the end of the 21 mile run by rail from the city, and there is space enough in the woods and gardens of the delta to absorb the whole pleasure-loving population of the city. Within the memory of living people this delta was covered by forest and undergrowth thick enough to contain the lairs of the spotted jaguar of South America, which has left its name to the river but is no more to be found in its neighbourhood. This is the fruit-growing suburb of the town. Miles upon miles of peach trees, mixed with figs and other fruit, extend in lines along the banks of the streams and canals, well-tended and cared for, and the amount of fruit that is thrown upon the market from the delta country must be often in excess of the demand, even in this fruit-eating centre. The surface of the river is occasionally covered with the floating débris of the market gardens. A curious population has sprung up in the delta, which, I am told, is an admixture of Basque, Spaniard and Italian, speaking Spanish and living an easy, indolent life in a sort of Eden which requires but little delving. They are a cheery, good-looking people, bright, intelligent and contented, taking no great interest in politics, and indifferent to the revolutionary agitations which occasionally rage around them. The richness of the delta alluvium extends to the districts which border it.

It is on the Las Palmas that the most productive grazing land in Buenos Aires province is to be found.

It is here that it is possible to put sixty sheep to an acre of grass (one hardly likes to write it down!), and these sixty sheep will live on that same acre all the year round. I imagine this record (taken from the *Estancia* at Las Palmas) to be the record for the whole agricultural world.

Cattle raising and agriculture are the backbones of



PEDIGREE BULLS. ESTANCIA CHAPAD MALAL.

Argentine industry; the future of the country mostly depends upon them. Statesmen as well as private citizens take, therefore, a great interest in their development. A distinguished Senator will stand in the midst of a mob of some thousands of cattle and will say without hesitation what must be the nature of the grass land on which they were reared, with the same confidence that enables him to dilate on the characteristics of the remarkably divergent races of people

for whom he is called on to legislate. A very distinguished officer in the Argentine service (Colonel Urquiza) is the happy proprietor of the Estancia of Las Palmas; and of all the delightful days that I spent in South America, none was more enjoyable than that which included a memorable drive behind a magnificent team over and about his estate. His fancy ran to cattle breeding, and the parade of young aspirants to prizes at the Agricultural exhibitions of the year was a show that was worthy of far higher and more cultivated appreciation than a British officer with a record of thirty-six years spent in India was likely to possess. Horse breeding is a fascinating pursuit all the world over, and nowhere is it more scientifically maintained than in Argentina. There will be more to be said hereafter about the Argentine horse. It is enough just now to say that a well-bred Argentine horse fills the eye as satisfactorily at every point as does a well-bred English horse. Nor is there any reason why he should be in any way inferior either in appearance or stamina. But the well-bred Argentine horse is not to be had for nothing, even in Argentina, where it is, after all, only inferior quality, which is to be had for inferior prices.

Cattle breeding and sheep farming are, however, the great industries of a country which bids fair to become one of the greatest meat-producing countries in the world, and which has already established an export trade in chilled or frozen meat which is so remunerative that the directors of the chief "cold meat" companies draw a discreet veil over their dividends. I have enjoyed the privilege of a visit to one or two of the biggest of these establishments for the preparation of beef for the London and South African markets in the neighbourhood of Buenos Aires. It is a privilege which I have never desired to repeat. Outside the great

shambles was the live bullock awaiting his turn to be hauled, with the assistance of a lasso and a steam winch, until his head came under the knife, which, with one single thrust, divided the spinal cord. Inside were thousands of carcasses, a whole forest of butchers' meat, suspended over a floor that was slippery with blood in spite of the drainage arrangements (not much of the blood is lost, however), and thick with the slimy grease



LASSOING CATTLE FOR BRANDING.

of miscellaneous butchers' débris. The essence of dead meat which pervaded the atmosphere was sickening. But the work was artistically done. There was no hitch in the sequence of operations which turned a live bullock into two dead halves ready for the freezing chamber in the course of half an hour. He was skinned with a rapidity which could only come of expert practice, and every little bit of him was utilised—horns, hoofs and et ceteras. I am not a connoisseur in beef, but there could be no mistake about the excellent quality of the

butchers' meat which is prepared for freezing. To all outward appearance it is equal to the very best English beef. But whether it retains its full value in flavour and nourishment after the freezing process is a matter which only experts can decide.

An Argentine ought to know good beef when he meets it. Many Argentinos live on nothing else. They are content to do without bread, without vegetables, even without salt, provided they can get beef. So strong is the influence of this habit on the constitution that a refugee of the forests who had put himself beyond reach of the law, and who lived for fifteen or sixteen years in a wild mountain retreat, hunting for his food from day to day and eating nothing but meat (it was as often mare's flesh as mutton or beef), was positively sick when he was first introduced again to reasonable prison diet with vegetables. The Abyssinian, who likes his beef raw (but who prefers to take it with bread), is just as difficult to please as the Argentine in the matter of cuisine. He says he cannot digest cooked beef, and his views as regards the quantity which should make a meal lend a certain probability to his objection.

Coincident with the preparation of beef for the market is that which deals with mutton. The rapidity and the skill with which the unfortunate sheep are disposed of, and turned into carcasses ready for the freezing, is not less astonishing than similar performances in the case of beef, and the selection of carcasses is even more carefully conducted. Every carcase that shows the smallest blemish (often caused by the rough usage which the sheep experiences in transit by rail from the Estancia) is at once eliminated and sent to the local market. The meat which passes through the freezing chamber is absolutely sound. The process of freezing is the ordinary one of reducing temperature by the compression, or expansion, of ammonia, the gas being

run through passages or pipes into the freezing chamber. For the chilling process, which now is rapidly superseding the freezing, a much higher temperature is maintained, the thermometer indicating nothing lower than 29° F. The tinning of "Paysandu" tongues, manufacture of "extractum carnis," and various other preparations of tallow and fat are all branches of the same great industry and carried on under the same roof.



THROWING CATTLE FOR BRANDING.

About 6,000 sheep alone pass daily through these big Argentine "saladeros," and the prospects of expansion in the trade are enormous. A "saladero" (or "frigorífico," which word seems to be more appropriate) has lately been started at Bahía Blanca, and it will not be long ere every coast port of Argentina possesses its own outlet for Argentine meat.

In order to understand the extent of this comparatively new trade development, which promises to become a mainstay of Argentine commercial pro-

sperity, it should be remembered that the first meat-freezing station was only established in 1883 on the River Plate. In 1884 the "Las Palmas" station was founded, and in 1886 the Sansinena. These three "frigoríficos" have handled all the frozen meat trade of the country so far. From 17,000 frozen sheep exported in 1883 the totals rose to nearly three million sheep and 120,000 cattle in 1901. In 1902 two new companies were started, and lately the River Plate Fresh Meat Company has commenced operations with "chilled" meat. But taking the returns of the three freezing stations, and comparing them with those of New Zealand and Australia, we find that in 1901 (in reference to these three countries alone), Argentina already monopolised nearly 60 per cent. of the meat imports into the United Kingdom, Australia following with 21 per cent. and New Zealand with 19. And Argentina is developing this branch of trade every year.

Since 1900, dairying has been pushed into prominence as a paying business by the initiative of two "lecherías" (La Martona and Granja Blanca), which have already sufficiently demonstrated its importance. There are at present more than a dozen great butter and cheese factories; creameries are being daily established in many of the provinces, and co-operative societies are starting up in every direction. Butter is now exported in large quantities, and it is of most excellent quality. Over three million pounds were exported in 1901, and there will soon be ten times that amount. The enterprising owner of the Martona estancia expected to turn out 500 tons of butter for exportation from his farm alone this year. The Chief of the National Department of Agriculture and Live Stock Industry says: "Nature has undoubtedly endowed Argentina with advantages for agricultural and pastoral farming not to be found in any

other part of the world, and it is not too bold a forecast to say that if the country continues to improve her natural gifts in the same degree in which they have been improved and cared for up to the present time, the day will come when the Argentine farmers will have absolute control of the world's food markets." This is indeed



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a bold prophecy, but it would be rash to deny the possibility after having seen Argentina.

One cannot take leave of Buenos Aires without a word or two in recognition of the splendid hospitality and the friendly good feeling which the members of the English Boundary Commission experienced in that city. From the President of the Republic to the President of the Sporting Club at Hurlingham, and from officials of the Railway departments, the Telegraph service and the Post

Office, from members of the Argentine Government and of fashionable society, from senators and scientists, from soldiers, sailors, missionaries, priests and people, there was but one word of kindly welcome, backed by one obvious desire to make all things plain and easy for the peace-makers. This was delightful, and perhaps the more so from being not altogether expected; but this generous flow of friendly sentiments rather disarms criticism on social subjects.

With regard to the social ethics and the true inwardness of Argentine life in its capital, I am no authority whatever. Something has already been said about the Argentine man as a unit in the ethnographical scale and the form of existence to which his environment and idiosyncrasies lead him—his cleverness and his aptitude for law and politics, his capability as an administrator. No one can deny the fascination of the Argentine as a companion or host. He is brilliant and witty, and as generous as a Russian; always courteous and always willing to place himself at the service of the stranger.

The foreign resident is as much a dispensation in Buenos Aires as ever was the Uitlander in Pretoria; and of the foreigner it may be generally remarked that the inevitable effects of climate and surroundings are as apparent in the formation of character as they are in that of the native. He often possesses many of the weaker idiosyncrasies of the Argentine without the grace of those redeeming qualities which make the latter interesting. The Britisher carries with him his insularity and exclusiveness, together with his usual indifference to the necessity of studying the language of the country, and he frequently adopts the nerveless apathy that is generated by high living and generous ease if he stays in Buenos Aires. Nevertheless, the foreigner is a most important factor in Argentine development and will continue to be so for many years to come.

But what shall I say about the Argentine woman? I can only write of her as I found her—gracious, graceful, hospitable, clever and entertaining. I have heard that she is fond of dress and extravagance, and I certainly never met an Argentine lady who was badly dressed when smartness was *en règle*. The Argentine woman can rival the Parisienne in the taste and fashion of her toilette, and she has a distinct dislike to wearing the



BRANDING CATTLE.

same dress more than once. Such characteristics are hardly reconcilable with the practice of economy, and it is certain that the extension of fashionable dress to children is carried to an extent throughout South America (not only in Argentina) that really is extravagant. The child is often brought up from infancy to regard frills and fripperies and all the *et ceteras* of baby millinery as the first and greatest object of existence, and it appeared to me that the children like it. The instinct has become hereditary with them. Some of them air

their fashionable stockings and perfectly appointed little boots and shoes as if life was only worth living on a carpet. Argentine children are certainly spoilt, according to English ideas ; but when a pretty frock becomes merely an additional charm to an otherwise charming girl, and when the regulations and usages of polite society all the world over demand tasteful and effective dress, then one can only say that the Argentine lady takes her place in the very front rank of well-turned-out womanhood. Can any audience in the world rival that of the Opera House at Buenos Aires for its display of charming toilettes and handsome women ? Something of the Old World custom of separating women from men in large assemblies seems still to prevail in South America. At any rate I observed that the women love to place themselves in artistic rows (there is, by the way, one gallery reserved for women only), and admit of no ugly black and white blotches of male attire to interfere with the harmony of their perfect colour arrangements. It almost appears as if each individual unit dressed with a view to the effect of the whole company. And the total effect is brilliant, harmonious, and infinitely delicate and pleasing in colour expression. The opera itself is excellent ; no expense is spared by a music-loving people to obtain the best artists in the world. But that is a detail. No one goes to the Buenos Aires opera merely to listen to the music.

It may be conceded, I think, that the Argentine woman is sometimes extravagant and that she dislikes physical activity. She cannot (and would not if she could) take violent exercises common amongst her English sisterhood. It would disturb the harmony of her perfect repose ; but the result is that she sometimes does lose the lovely figure of her girlhood a little too soon. The grace of an Argentine girl and the exceptional beauty that sometimes distinguishes her is a theme which is beyond me

altogether. Let a more eloquent pen than mine, once held by the "vanished hand" referred to in Turner's interesting book, "Argentina," sum up the Argentine girl's attributes in its own sweet way :

"Imagine a brunette of fifteen or sixteen developed to a precocious maturity. An erect figure of medium height, but splendidly proportioned. With a bust that would make Lytton's flat-chested English women green with



PLOUGHING VIRGIN SOIL.

envy. A proud and graceful carriage. A face perfectly oval with a complexion spotless, but with a slight tinge of Creole blood which imparts to the cheeks a hue like that of the damask rose. Eyes large, dark and lustrous, fringed by lovely silken lashes and over-arched by brows which 'with the night of her hair' make her white forehead look like alabaster. Small and delicately chiselled nostrils that dilate nervously at every inspiration. Teeth so white and regular that to catch a glimpse

of them through the arch of a smile is to wonder at nature's perfection. And the only fault of the beautiful face—the full red lips and the sensuous lines that surround them, symbols of a passionate and voluptuous nature. Imagine this face set in a frame of soft black hair and surmounted by a hat of the most coquettish fashion on which repose real flowers and live fireflies ; and that lithesome figure attired in a dress of some soft texture and delicate tint and of a fashion only known to the Worths of Paris and Madrid, with a sparkle here and there of a diamond or the shy glimmer of dull gold ; and imagine the whole being instinct with the grace and vivacity of youth, and you have a portrait of the Argentine girl.” It would be ungracious to criticise such a portrait, or refer to such a trivial detail as the complete change of fashion in the matter of live fireflies. On the whole it crystallises the impression which every appreciative foreigner must carry away with him from Argentina.



AVENUE ALVEAR, BUENOS AIRES.

[To face page 97.]

CHAPTER IV.

THE ARMY, NAVY, SEAPORTS AND ESTANCIAS OF
ARGENTINA.

FEBRUARY is a hot month in Buenos Aires. The air of the town is stuffy within the narrow streets, and the sun glare bakes and cracks the soil outside, pulverising the surface and filling the atmosphere with haze. With the warm breath of the north wind comes no alleviation from the heat. Even the happy, light-hearted Argentine feels a drooping sense of depression within his soul, and it is then that the spirit of unrest is said to hover around the darker corners of the city. People who can leave the town and take refuge in the country are in camp, and the vivid animation of the Buenos Aires society "crowd" is wanting in Palermo. Those who cannot leave the town crawl through the streets with a despondent air, and fill the tramways or the clubs with pessimistic politics. For the alleviation of this universal depression the wind has only got to change. The freshness of the Atlantic breezes sweeping up from the south-west soon dissipates the physical and moral fog that besets the La Plata banks, and blows life and vigour back again into Buenos Aires. Fortunately the north wind is not the prevailing wind of Argentina, and with the freshness of the air currents from the south the climate is always pleasant enough, even in the hot summer months.

At the end of February on a day when the air was alive with a southern breeze, and the heat of the sun was

modified by the dust haze which enveloped the land, we started for the Argentine Aldershot—the Campo de Mayo—to witness a few military manœuvres, and to see as much of the Argentine army as could be paraded conveniently at that slack time of the year. There were two or three battalions of infantry, three cavalry regiments and six batteries of artillery—just a sample force sufficient to indicate the nature of Argentine military strength. Here let me acknowledge the courtesy and good fellowship of the Argentine military officials. Nothing that we expressed a wish to see or to know was withheld, nothing that could add to our comfort and convenience during the process of seeing was wanting. From the Minister of War (one of the best of cicerones) to the A.D.C., every officer seemed to present himself as a living source of reference for details. To their credit I may be permitted to record that the Argentine military mind, either by training, or by some principle of natural selection, seems especially adapted for the registration of details. It was not only the infantry officer who understood infantry economy and tactics, and the cavalry officer who could enlighten one on the relative merits of cavalry and mounted infantry, but each seemed to be equally well posted in those details which concern the combination of all arms in the field. Possibly the officers whom I had the honour to meet were exceptionally well qualified to give an opinion on such points as were likely to interest me; but it really seemed as if the germs of future generalship were in them all alike, and only required opportunity for very practical development. Certainly, there is nothing lacking in military education in Argentina, if we are to judge by the English standard. Argentine officers know their business theoretically; and they are only too keen to prove to the world at large that they know it practically also. In judging the standard of military efficiency of the troops we saw, it is as well to

recall the conditions under which they serve. Every Argentine youth has to put in two years with the army when he is twenty years old. If he takes kindly to the service he continues for three years more. But the great majority of the effective military force of the Argentine State has much less than two years' service, and as regards the troops we saw in the field, two months would probably be nearer the mark than two years. A great deal can be done with infantry in a few months, no doubt, and in a day's manœuvring over roughish ground it is probable that the ragged edges and irregularities of incomplete drill education might pass unobserved; but imagine the effect of placing in the open field of Aldershot two or three regiments of cavalry and six batteries of artillery that could only record two or three months' training! And further imagine the result if, in addition to the lack of training amongst the men, a large proportion of the horses were young, only half broken, and facing the music of a review probably for the first time in their lives. Two years are required to make a good cavalry trooper in England. In Argentina apparently about one-twelfth of that time is sufficient, for, with one solitary exception, the cavalry manœuvres were carried through with splendid *esprit* and accuracy, without an accident, and the artillery (so far as the clouds of dust would permit a partial view) were just as effective as the cavalry. The secret of it no doubt lies in the fact that Argentine men and horses are brought up together. Children learn to ride almost as soon as they can walk. The Gaucho is not "horsey" in the English sense. He *knows* his horse with the knowledge which is acquired by custom and heredity, and he takes him for granted as he takes his own brothers and sisters. Moreover, his natural seat on a horse is not unlike the regulation military seat. He sits straight, with his heels back, and he seldom uses his stirrups. The military riding-school seat

is not altogether new to him, and the riding master is probably not too particular. The result is that as soon as a horse has acquired the ordinary parade and *manège* tricks, he and his master are as effective a cavalry unit as could be desired. One little exception was useful to prove the general rule of efficiency. After a troop of cavalry had swept by at the charge, one trooper was seen to be in difficulties amidst the dust cloud in rear of the troop. His saddle had shifted, and the girths were cutting his half-educated mount badly. This started an impromptu Wild West performance which was really interesting. But with a revolving saddle and a buck-jumping steed the result was inevitable. He parted company at last with his charger after a gallant but ineffectual struggle, and the smartness of his blue uniform was impaired for the day. This, however, was the only casualty which occurred during the manœuvres which lasted through a long morning. It need hardly be said that the horses of the Argentine cavalry were not the horses which found their way in troops for the mounting of infantry in South Africa. They averaged about fifteen hands in height, they showed signs of careful breeding, and certainly were not lacking either in general quality, or in quantity of bone and muscle. And they were in excellent condition. So much has been written and said about the Argentine horse that I am not inclined to add to existing literature on this subject; but it should be remembered that the horse is almost, if not quite, an indigenous product in South America. The usual tradition points to a Spanish origin, and insists that the horse first appeared with the Spaniards in the sixteenth century, and that the present stock of South America sprung from the sixty or seventy animals which were left loose after the first Spanish retirement from the coasts. Geological investigations throw some doubt upon this tradition, and there are many Argentine authorities who

believe the horse to be indigenous. However that may be, the ordinary Criollo, or quasi-wild horse of the country, is a very different stamp of animal to that which the Argentines adopt themselves for military purposes. He is usually an ugly, heavy-headed animal of so many shades and varieties of colour that none but a Gaucho could describe them in proper technical Spanish; and



AN ARGENTINE TROOP.

[*Don Carlos Bruch.*]

he is undoubtedly wanting in grit under the pressure of continuous hard work. For a day, or for two days, his performances are often marvellous, and the stories that are told of the distances covered in twenty-four hours of hard riding (a steady hand gallop is the regulation Argentine pace on the pampas) are almost as difficult to believe as the Asiatic records of similar performances in Turkistan or Baluchistan. But there is no reason to doubt them. The Gaucho thinks nothing of riding his

horse till he drops, and the ordinary traveller who speeds his way across the trackless wastes of Central Argentina usually drives a small troop of loose horses in front of him and changes his mount from time to time. A used-up horse is left on the road to find his own living until he is picked up again on some future opportunity, and it is surprising how rapidly a troop will diminish from this cause alone if continuous marching from day to day is kept up at ordinary rates of progress. The Criollo is a grass-fed animal, knowing not the taste of grain, which would possibly disagree with him if he were fed with it unadvisedly ; and his usual habits are absolutely opposed to anything in the shape of a tether or any sort of restraint when he is off duty. These are conditions which are unsuitable for African service. I do not say (because I do not know) that the Criollo was the horse selected for the work of British Mounted Infantry in South Africa, but the exceedingly cheap rates of purchase indicate that it must have been so. In Argentina, as elsewhere all over the world, a good horse must be paid for at reasonably high rates. A Criollo may be had for a few pounds. Men, horses, and equipment were all in turn placed under our inspection, and it is impossible to record any other impression than that of good quality and serviceable, well-selected material for both cavalry and artillery.

As regards the infantry it is more difficult to form an opinion. It must be conceded that it was a most trying day for infantry manœuvres. A glaring sun, soft yielding soil with an irregular surface, and thick clouds of dust sweeping in columns across the field annihilated all smartness in appearance, and added much to the fatigue of marching. Nevertheless, there appeared to be no ground for such sweeping condemnation of Argentine infantry as I have seen lately in the works of some modern writers. Ten or fifteen years ago Argentine infantry

may have presented the appearance of an irregular, "ill-dressed and undisciplined mob," commanded by over-dressed and ignorant officers. It is not so now. The conscript passes through a most effective (even severe) course of training. Amongst other things he learns to keep himself clean, to obey orders, and to shoot. Military service is not altogether unpopular amongst those most concerned—the present generation of young Ar-



A TROOP OF THE COMMISSION HORSES.

[*Don Carlos Bruch.*]

gentines—although some members of the older generations still appear to regard it as exercising a deteriorating moral influence, whilst admitting the excellence of the physical results. The men's quarters at the Campo de Mayo were much better than the old huts at Aldershot, which were so long considered good enough for the British Army, and their food appeared to be good. If the Argentine soldier's life is not a happy one, it is at least a useful one—useful to himself personally in the

first instance for the physical improvement which it effects in him, and then useful to his country as the best possible security for its continual peace and prosperity.

The fighting army of South America, generally, will, however, never be infantry in the future unless it be mounted infantry. In Argentina especially, where a horse can readily be found for every man, and where every man knows how to ride, and where there is a large population (diminishing unfortunately day by day) which habitually exists on the very scantiest of a meat supply which needs no special transport, caring nothing for those extras which make so large a demand on English commissariat, efficient mounted infantry is almost ready made. The mobilisation of such a force would be as effective as that of the Boers, and its discipline far superior. As for the fighting qualities of the Argentines, the history of San Martin's magnificent campaigns, fought for the freedom of the whole of South America, quite sufficiently attests to the former value of the Gaucho in the field. In the Paraguay campaign (during the sixties) Argentina vanquished a most valiant foe. In England at any rate we have small reason to underrate the indigenous military capacity of Argentina.

A visit to the arsenal with the Minister for War was not less instructive than the visit to the camp. A solid phalanx of field artillery guns (Krupp—75 millimetre), tons upon tons of ammunition (all to suit one calibre), hundreds of thousands of closely-packed rifles (Mauser); equipment which, when stacked, could be measured by the furlong—it was all there, and all ready for the 60,000 infantry, 25,000 cavalry, and 20,000 artillery which would be in the field at a month's notice. Of the details of this mass of military material I have nothing to say. I saw it in the lump, and the weight of it impressed me. I became aware that if the boundary question which was then pending had led to nothing else, it had placed

Argentina on an efficient footing for the defence of her own interest and the security of her own borders, even if it had not raised her to the rank of an aggressive fighting power to be reckoned with by all American States.

But nothing so prosaic as a purely military promenade designed for instruction, and meant to furnish me with an encyclopædia of military detail, could be permitted in such a bright and cheery atmosphere as that of Argentina. The Argentines are a happy minded people; a people who only too gladly combine pleasure with the daily business of their lives. A clump of gray dusted eucalyptus trees, shading the courtyard of a long single-storeyed farm-house near the field of action, answered all the purpose of sun shading that was required for a long deal table spread with all the delicacies common to an Argentine *al fresco* lunch after the manœuvres. I remember the "Carne con cuero" well—it was my first introduction to this special Argentine dish. It represents the flesh of an animal roasted in its skin so as to preserve all the juices of it. But to the uninitiated it appears to preserve much of the natural toughness of the beast as well. There can be no doubt that meat cooked in this way retains many of the good qualities that are claimed for it, although a real artist at camp cooking will turn out a "kabab" (a roast), with a wooden spit over a wood fire, which, to my thinking, is superior to the "con cuero," which latter, indeed, may be regarded as a relic of an aboriginal barbarism. In the jungles and wilds of the frontier, to kill and eat a mare or a bullock is a matter of hours only, not of days; there a man possesses no other weapons for dealing with his food than a set of extra good teeth and a sharp knife; food is taken by a hungry Gaucho either lying down or standing up, the difference between the manners of a wolf and those of a man in the matter of assimilating great chunks of half-raw meat, and of clearing the last remnants from a bone, being ex-

ceedingly narrow. Our lunch was by no means restricted on this occasion to the traditional dish. Argentine cookery is world-famed, and whether in camp or in quarters, no one knows so well how to feed himself and to entertain his friends as an Argentine. It was a royal lunch, made tuneful by the strains of an Argentine band, and memorable by the hoisting of two flags (English Jack and Argentine) side by side on the same masthead. All that could be done to show a spirit of respectful friendship with England was done on that occasion. Then followed a visit to a neighbouring estancia, where were Argentine ladies and many charming attentions to be reciprocated, until the impressions produced by the exhibition of armed strength concentrated for a day's manœuvres were almost lost amidst other and pleasanter sensations at the end of a weary day.

Our practical acquaintance with the Argentine army was brief, and our experiences with the Argentine navy were not much more extended. We were the guests of the Republic on two or three of the national cruisers during short voyages, and on these occasions we enjoyed the opportunity of meeting the Argentine sailor at home, and we found him much like other sailors. There is something in the breath and the breadth of the sea, in the influence of its wayward motions and the vigour of its sweeping currents of tide and wind, which appears to lift men to a common level of human understanding (placing them somewhere above the ordinary plane of common meanness and small-souled misunderstandings), and giving to all alike a freemasonry of brotherhood and good fellowship which may be searched for in vain amongst the professions of the land—even amongst their military colleagues. An Argentine sailor officer, or a Chilean, or an Englishman—it is all the same when they wear the blue uniform with the gold stripes, and welcome a stranger on the quarter-deck of a fighting ship. It

would be but a very small compliment to pay to the sea-going officers of Argentina or of Chile, to say that we were welcomed with free hospitality and warm-hearted good fellowship whenever we found ourselves afloat. Of course we were, and it mattered nothing what our mission might be, or what were the object of our coming and going, so long as we were guests, and belonged to a friendly people.



ARGENTINE CRUISER "BUENOS AIRES."

[*Don Carlos Bruch.*

Anyone who takes the pains to refer to the Argentine year-book, can see for himself of what the Argentine navy consists. Six first-class armoured cruisers, four second-class, three ironclads and a complement of destroyers and torpedo-boats make up a navy carrying a weight of gun metal which places Argentina in the front rank of South American naval powers. With a thousand miles of Atlantic seaboard, with coast ports of such importance and growing influence as Bahia Blanca or Gallegos, and with the prospect (not very remote) of

more such coast ports extending from the La Plata to Southern Patagonia, this does not seem to be a navy of unjustifiable dimensions. It is true that the foreign trade of Argentina is chiefly in the hands of foreigners and is carried in foreign ships ; but this does not relieve the country from the necessity of protecting her local trade, and of securing her coasts from aggression ; nor is it possible to say what the influence of an effective fleet might be in determining her political relationship with other South American States. The best security for peace is effective armed defensive strength. When we consider the strength of the Argentine navy in relation to the interests to be safeguarded there does not appear to be a ship too many. As far as the land forces are concerned, the 18 battalions of infantry, 12 regiments of cavalry, 8 of artillery and 4 battalions of engineers, which comprise the standing army, appear to be fully sufficient for all purposes of internal administration. These form the nucleus of a field force of 500,000 men, which is the present estimated fighting strength of Argentina in case of aggression. As the whole of this force could probably be mounted for purposes of mobilisation should it be necessary, the defensive strength of Argentina by land must be reckoned to be formidable even by the European standard.

There is, however, one weakness in the constitution of Argentina defensive sea force. Argentina has no native-bred sailors. It is a curious fact that along the whole line of the Argentine coast from Buenos Aires to the 52nd parallel of latitude, there is not a single fishing community of any extent, nor a single port where sailors are born and bred. The raw material for the Argentine sailor has to be found elsewhere than on the sea. Sailors are conscripted for two years from the land forces (chiefly from the Guardia Nacional), and their practical training is probably condensed into nine months. They are first

taught to respect the virtues of cleanliness and discipline, and afterwards it appears to be sufficient to inculcate a knowledge of gunnery and shooting. The gun practice is at any rate good. But nine months of life on board a ship will hardly make any man into a sailor. The Argentine sailor looks smart enough on deck when drawn up for inspection, but it is only necessary to watch him lower a boat over the ship's side and take his place with an oar, to see that he is not to the manner born. Willing and active and easily taught, showing wonderful aptitude in acquiring a knowledge of the routine of the ship—all that he often is, but all that will hardly take the place of the instructive knowledge of the ways of the sea which comes by heredity. At present training schools for the rank and file have been established on board some of the Argentine men-of-war, and there exists a regular training-ship for officers which is always cruising round the world. The Argentine fleet is a "fleet in being" if ever there was one. Before my arrival at Buenos Aires there had been some extended manœuvres carried out by the Argentine navy, in which I am told that nearly one hundred ships were engaged. Not a single hitch of any sort occurred during the progress of these manœuvres, which sufficiently attests the high standard of efficiency which has been attained by Argentine navigators in the management of their ships. Subsequently I had the pleasure (as will hereafter be told) of a voyage through the intricate channels or straits of the southern archipelago in ships of the Argentine navy, and the skill with which that dangerous navigation was negotiated filled me (a landsman) with admiration. Through rock-bound narrows, amidst gleaming glacier-streaked mountains, we threaded our way as if we were a pleasure party in a small steam yacht, and never once failed to make the little harbour, or port, for which we were bound from day to day. The rapid and complete success of the late ex-

pedition to the Antarctic to discover and relieve the lost party of Norwegian explorers is a feat of which any navy in the world might be proud.

The trade of Argentina at present centres itself in two or three of her principal ports. Buenos Aires is by far the largest and absorbs about 85 per cent. of the imports and nearly 50 per cent. of the exports of the country. It is still increasing. On a total of about 650,000 tons, representing the capacity of ships which entered the port in 1880, the increase amounts to 8,650,000 tons in the year 1900. The port at present, including the two basins and four docks, has an area of water enclosed equal to 660,200 square metres. These figures, perhaps, convey little impression ; but an analysis of the trade capacity of the ports of the world showed Buenos Aires as ranking 12th on the list as long ago as 1887, when the total tonnage of the ships which entered the port was only 5,000,000 tons. La Plata, Rosario, and Bahia Blanca are the three principal ports outside and beyond Buenos Aires. Rosario at the end of the century absorbed about 9 per cent. of the imports of the country and double that percentage of the exports. Rosario is a pretty town on the Paraná river, about seven hours' journey by rail from Buenos Aires, and has all the appearance of a rapidly-extending and flourishing river port. A wide area of the richest grain-producing country in the Santa Fé province centres on Rosario, which is much more the capital of the province than Santa Fé itself. The extraordinary natural advantages possessed by Rosario as an export centre—its deep water channel running under a high bank admitting of the shipment of grain into the holds of large vessels by the simple process of gravitation—have saved that place so far from port dues and contributed greatly to its rapid expansion ; and there can be very little doubt that with the introduction of means for improving the navigation of the river, together with the internal land transport of the country

(schemes for which are already matured), this port will rise to a position of considerable significance amongst Paraná river ports in the coming days of complete Argentine agricultural development. The great trade of the place is the grain export, and that trade is most largely assisted by the natural conformation of the river channel and the river banks. It may be largely affected by the imposition of a tax, which may have the effect of sending ships to other ports on the river possessing almost precisely the same advantages of natural position though not at present owning such good rail communication.

The third river port of significance is La Plata, about which something has been said already. But with only $1\frac{1}{2}$ per cent. of the import trade of the country and $2\frac{1}{2}$ of its exports, La Plata (one of the most beautiful towns in Argentina) is no rival to the newer ports which are springing up farther from the overshadowing influence of Buenos Aires.

There are other minor ports on the Paraná above and below Rosario which may hereafter rise to significance, not only on account of the broad wheat-growing leagues of "camp" which stretch away behind them, but for the local development of trade on that remarkable river itself. The enormous volume of water which is discharged by the Paraná (a volume twice that of the Ganges and five times that of the Nile) renders it a most important geographical factor in the future development of South American trade. It presents a magnificent spread of water between Rosario and the La Plata, running in many channels and forming islands which progress down stream at the rate of some score feet per annum, losing their upper edges as they are eaten away by the wearing current of the upper stream, and extending themselves downward with the assistance of the washed down detritus. Here are beds of rushes covering leagues of sur-

face ; willows sprout and grow wherever the foothold is sufficiently secure, and the vegetation which yearly leaves its quota of decay to add to the general level grows ranker and with yet more vigour as the soil which it forms grows solid beneath it.

As a spectacle the lower Paraná affords but little that is beautiful, or even ordinarily picturesque. There is a dead monotony about the broad flat water spaces fringed by narrow lines of willows or poplar. Now and then a short reach in one or the other of the Paraná channels contracts to an ordinary river width, and here the mass of bordering trees reflected in long perpendicular lines on the river surface faintly recall visions of the Thames. But taking it "for all in all" the Paraná is an ugly river, redeemed only by the beauty of reflected lights, or the glory of a mirrored sunset.

One such sunset we were privileged to see as the little river steamer which picked us up at Rosario made her way down towards Buenos Aires. Rain was much wanted. Thousands upon thousands of tons of maize lay waiting the gathering for shipment, and as they lay they absorbed moisture from the heat-laden atmosphere and showed a terrible tendency to sprout and spoil. Rain could not remove the moisture, but it would inaugurate the autumn, and bring with it cool draughts from the South, and the atmosphere would become refreshed and dry again. Thus might the maize crop be saved. As we slid down the flat river there was every appearance that such rain was at hand. Heavy thunderclouds filled the West and light wind-swept wisps streaked the blue above. As the sun went down great fat cumuli took strange shapes, and a weird figure with gigantic head and outstretched arms loomed between us and the setting sun. Its head shot a strange shadow right athwart the sky, lost in the arch overhead and shaping itself again into a deep blue band as it vanished into the Eastern perspec-

tive. Then, suddenly, all changed. A most brilliant rose light caught the edges of the thunderclouds ; the shafts of the flying cyrrhi turned scarlet in the blue, whilst the reflections on the flat water, catching the colours of the sky, were drawn out into long mirrored perpendiculars amongst other reflections of round-headed young eucalyptus trees reversed in the stream. Never have I seen such a perfect reproduction of a sky picture in water spaces. In the last gloaming between earth and sky the rose colour of the clouds deepened to brick red ; the opal beyond, with radiating shafts of alternate rose and blue, was smirched with dusky lines of skirmishers ; the river took on a steel-grey tone with red splashes, as of blood ; the banks deepened into inky blackness ; and then the light went out with Oriental suddenness. Clouds which had just before been soft, and rounded, and fleecy became hard as the cardboard slides of a theatre against a faded yellow background ; and under a struggling moon soon all the world became black and white. This was in the Las Palmas channel of the Paraná, and it was this, rather than the magnificent size and oppressive volume of the Paraná, which floated in my memory at the end of a delightful day of river navigation.

In the great future of South American development the Paraná has a big part to play.

It is not, however, the river ports of the Argentine with which the Argentine navy has chiefly to do. Buenos Aires occupies a geographical position which may be described as almost unassailable by a foreign fleet, and it is a curious fact, due to the physical conformation of the Atlantic sea border of South America, that many of her important coast ports are protected in a similar way. About the end of May 1902 we were shaping our course in the Argentine cruiser *Buenos Aires* from the South for Bahia Blanca. It was never possible to approach the coast on account of the widely extended shoals which,

reaching off that eastern shore, throw the usual course for vessels going north far out to sea. The weather was rather thick and hazy. We already experienced some of the rough and tumble that even the steadiest of cruisers will experience when carrying a full complement of guns and deck weight, and the weather, though not bad, was of a sort which makes sailors particular about their bearings when in narrow channels. In the early morning we headed westward from the open sea to make our way through the intricacies of the entrance channels to the Puerto Militar of Bahia Blanca. So delicate a nautical manœuvre is this entrance to the port that it is never undertaken except in daylight, and even then it would be impossible in thick weather. Far out to sea and beyond reach of the most distant glimpse of shore the lightship and buoys are stationed which mark the channel through the shelving sands of that line of open coast. From buoy to buoy through a grey and foam-flecked sea we made our careful way, only picking up the sight of the next water-mark as we left the last behind us. Twisting and winding like a greyhound coursing a hare in the open, and not always maintaining a strictly straight course even from one buoy to the next, we gradually became aware of a thin grey line of flat foreshore with a few white specks about it that might have meant anything, and then we ran into the broad sweep of the open roadstead which, protected on the Atlantic side by a great width of perilous banks and shoals, forms the harbour, or bay, of Bahia Blanca. In the roadstead were several Argentine ships of war, and beyond them (in the graving dock) was the British ship *Cambrian*. Bahia Blanca, the future Liverpool of the South, is a double port. There is the Puerto Militar, which very properly blocks the entrance; and some miles farther west, the Civil port with the rail head and all the progressing development of a great modern trading port.

The graving dock and military harbour works had only lately been completed under the direction of a well-known Italian engineer, Chevalier Luis Luiggi, M.I.C.E. The war scare with Chile had given great impetus to the completion of the military lines and batteries. Six of the latter were complete, and in several of them the guns were already in position. A military railway had been laid down for purposes of internal communication, and the power of defence was already formidable. I need hardly say that an examination of these defences, constructed on the most approved modern lines, was of the very greatest interest. Batteries, guns, men and material were all there, and ready for prompt action against what they were well aware would be an enterprising naval foe. This extension of the port of Bahia Blanca (including the magnificent new graving dock and extensive harbour works) forms a military and naval depôt which will hereafter prove of great importance from its geographical position on the Atlantic coast, when the rapidly growing commercial interests of Argentina demand local protection. The harbour possesses splendid accommodation for ships of the largest class, whilst the entrance to it is so narrow and intricate as to render it easily defensible.

At first sight the bare, white sandy aspect of Bahia Blanca is unattractive. It is a bleached and sunbaked shore with a background of salt lagoons, and the glare of the sandy landscape is not improved by the broad white roads laid with "tosca." Tosca appears to be a limestone deposit analogous to the well-known "Kunkar" of India. But it is inferior as road-making material; for it wears easily and quickly, and is apt to be slippery after rain. However, it serves its purpose where better material is not to be had, and the tosca roads of Bahia Blanca are, after all, no worse than the chalky roads of the south of England. But the great Italian engineer, who is responsible for this

new "Portsmouth" on the Atlantic coast, does not leave his work with the bare outline of utilitarian construction filled in. He is to Bahia Blanca what the French botanist (and artist) M. Thays is to Buenos Aires. He first makes a place useful, and then renders it beautiful by his artistic taste. Chevalier Luis Luiggi believes in vegetation as possessing a regulating influence on certain meteorological phenomena, and a certain refining influence on the mind of the conscript. So he has set about the planting and landscape gardening, and finding a soil where everything will grow, he has laid the foundation of a really beautiful seaside resort which may hereafter render Bahia Blanca as popular as the overcrowded Mar del Plata further north. Afternoon tree-planting tea-parties are the fashionable amusement of Bahia Blanca, when every guest has to make himself useful with the spade. Some of the Australian trees (gums and acacias) flourish exceedingly, and the tamarisk makes a brave show. As for flowers, the ordinary scarlet geranium grows in square acres, and there appears to be nothing known to the horticulturist of things which grow in the breath of the sea that will not make a happy home for itself on the Atlantic coast.

The civil port of Bahia Blanca is growing from day to day. Argentines are fond of speaking of it as the Liverpool of the South, but it has much to do before it really deserves such a compliment. In the year 1899 the total registered tonnage of all classes of ships and steamers entering the port was only a little over 135,000 against more than two million at Rosario. At the same time, in the foreign trade statistics, 7 per cent. exports are credited to Bahia Blanca against 18.4 per cent. at Rosario. But the port developments have been so great since the railway extension reached it in 1885 and the first wharf was constructed, that it is impossible even to foreshadow the certain increase

of the future and which will be due to the rapid development of the pasture lands, the wheat growth and the meat trade of the Bahia Blanca hinterland. A new wharf is now under construction, 500 metres in length, but even that will not suffice for the trade of the port in the course of a few years time.

Considering the extent of Atlantic coast owned by Argentina, her coast ports are remarkably few, and for the most part insignificant. Yet there are indications at many points of a strong future development of further outlets for her growing agricultural and pastoral products, all of them offering further objects for the safeguarding protection of a navy. Mar del Plata will never be more than a fashionable seaside resort where people can promenade and dress and bathe (more or less) and gamble. It cannot be taken seriously as a trade outlet. But Madryn (the port of the Chubut valley, where the finest wheat in Argentina is grown), Santa Cruz (a well planted little town on the river Santa Cruz with a background of pasture land and much promise of wool), Gallegos and Ushuaia in the extreme South, where wood and pasture fill the wintry regions of Tierra del Fuego and wool is already making its name in the market, are all bound to increase with the general increase of Argentine population and the inevitable development of means of livelihood.

From Buenos Aires across the flat plains to Mendoza and the Andes is a journey full of weariness and dust, only relieved by the existence of the Western Railway system. We left Buenos Aires about the end of February when the summer foliage was yet fresh and the alfalfa (lucerne) patched the landscape with fields of vivid green. A well-known traveller in Argentina, writing of days that are three-quarters of a century old, divided the great flats that separate the Andes from the Atlantic coast into stretches of grass and stretches of thistles.

The grass and the thistles are still there, but I fancy that the latter have modified their growth since the time of Sir Francis Head. There is, at any rate, no evidence to be gathered by looking through the window of a railway carriage, of those forests of thistles which grew so rank, so high, and so thick that they formed favourable cover for highwaymen and bandits, and favoured a recurrent "robber" season. If they are still to be found in such primitive luxuriance it is not near the railway. There are, all the same, broad acres of thistle-covered country, but they are not regarded with suspicion. On the contrary, certain classes of variegated thistles are supposed to denote especially good "camp," and no regular raid is made against them by *estancieros*. I have seen thistles of all varieties of size, colour and growth in some of the waste spaces of High Asia. The Northern sections of the Herat province are full of them, and when they dry in the autumn winds and stand stiff and straight and full of aggressive spikes, they are very difficult to negotiate either on horseback or afoot. The thistle of the pampas is quite as strong and aggressive and as stiffly unyielding as the Asiatic variety, nor could I discern much difference between them; but the Argentine variety, like the tufted grass of the pampas, is fast yielding to the plough and the tramp of cattle.

The monotony of the outlook from the line of railway can only be compared to that of parts of the Punjab and of Sind in India. There is one vast wide green expanse of flat reaching away to a grey horizon, with little clumps of black eucalyptus here and there dotting the plain, and denoting the hut of the shepherd (when the clump is small), or the house of the *estanciero* if it spreads out into avenues and straight lines. The gleam of a whitewashed wall and the round-headed wind pump—the almost universal pump of the pampas, as

it is of the veldt—show where the head-quarters of the estate may be; and the estate itself (which is usually measured in square leagues rather than in acres) spreads out around it into illimitable space. When the ploughing season is in progress the vista of green becomes varied with the deep brown (almost black) soil of newly turned earth, and in the autumn the feathery crops of maize



HAY CART, ESTANCIA CHAPADMALAL.

form a cheerful feature in the everlasting flatness. Sometimes there is a lagoon or swamp (fringed perhaps with a white edge of some form of saline deposit) where the flamingoes stand about on one leg, and a vast number of waterfowl rise in haste from the water as the train goes by. Ostriches (the rhea is always called by that name in South America) stalk over the plain seeking what there may be to eat, and in some districts where they are really wild (which they are not in the upper

provinces) associate themselves with sheep. Experience has taught them that sheep are never hunted, and that ostriches cannot be hunted without seriously interfering with the sheep, so they live amongst them and steadily decline the open pampas. I have seen a large family of young birds no bigger than an ordinary turkey, running in Indian file along with a flock of half wild sheep that had been scared by a dog. They ran with the sheep, and only ceased running when the sheep did. The dog was a common enemy. Little owls sit on the telegraph wires, and hawks flit over the fields watching for the partridges, and these, with countless herds of cattle, are the chief living features of the unending plains of Central Argentina. For two long days there is nothing but the occasional railway station (where there is always a large gathering of the local population interested in the coming and going of the daily railway traffic), and from which there radiate out into the distance a group of unmade roads deep in native mud, to make a break in the monotony of a journey, which is, nevertheless, always full of interest.

The interest lies in the extent and the nature of the pasture lands through which one moves. Was the country always like this? Did all this extraordinary wealth of grassland exist from prehistoric days unutilized by the shifting Indian tribes except within a short radius of their toldos? It would appear that it did not; and the history of its production and growth is sufficiently curious. Everyone knows the ordinary decorative pampas grass, with its white feathery tufts, which form so striking an ornamental feature in nearly every English garden of any extent. This grass is, by the way, not at all an ordinary feature in the pampas. It is not often to be seen excepting in places where its growth is obviously encouraged, if not exactly cultivated. The natural grass of the pampas appears to consist of

several tufted varieties, growing short, strong, and wiry, sometimes thickening to a compact covering of the soil, but usually separated in an open formation with bare soil between the tufts, and occasionally (as in the mesetas of Patagonia) thinning out to a few sparse and scattered blades amongst the sheltering scrub. The short wiry tufts which cover the hills and plains of the south are known as "stipa," but I was never able to recognise



SHIRE MARES, ESTANCIA CHAPADMALAL.

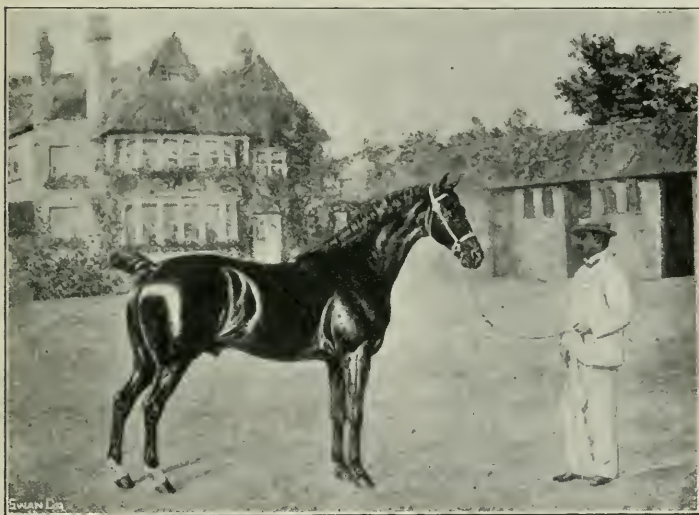
that name in the pastoral provinces of Central Argentina. "Stipa" grass is the most unpromising looking food for cattle or sheep that grows. At certain seasons of the year it is probably green and fresh and new. I never saw it so. In the autumn and early winter it is yellow, hard and stringy, like the frayed strands of a badly made rope, but it bears itself bravely, holding its own against the snow, despising frost, and thrusting its blades upwards for the benefit of sheep when all else is covered and unattainable. Over the hill sides it grows

thick and close, often more thickly and more closely on the stony broken spaces of the mountain slopes than in the watered hollows where soil collects. The hill shines with a yellow shimmer in the evening light where the stipa grass grows, and it can be seen up to the summits in the distance. This is often the best grass for sheep, and they grow so fat on it as to be more profitable for the "graseria" (the fat and tallow making establishment) than for the production of wool. This is the grass of Patagonia where once no grass was supposed to be; but where every watered hillside and every open space free of forest is full of it. The aboriginal grass of the fat provinces of Central Argentina is not exactly "stipa"—but it is clearly allied to it, and it develops under contact with animals in a similar way. It would be more correct to say that it disappears with the introduction of cattle, for it is a curious fact (and one that I have never heard satisfactorily accounted for) that, where cattle and horses run, there the original grass of the plains disappears, killed off for the time by new forms of pasture—forms that are rich and deep and strong—the pasture grass which makes Argentina the richest grazing land in the world. Where do the seeds of the new grass come from, and what makes it take such strong hold on the soil as to annihilate the old varieties? Where one sheep per acre was a full allowance for the pasturage before the growth of the new grass, 20, 30, even 60 sheep per acre may be grazed on the land, *all the year round* when that new grass takes possession.

Some men say that if sheep alone are left on it, or if the land is allowed to be unoccupied, the old tufted form reappears and the latter introduction disappears; and so indeed it appears to be if you look at the broad road sides. Where there is no grazing alongside the central track, there is the tufted grass, and it lies up

close to the fence (beyond which are the cattle) where not a tuft is to be seen.

I enjoyed the opportunity of visiting several of the big estancias in Argentina. They were all of them successful farms with a magnificent show of stock and agricultural produce. Consequently it goes without saying that they were all under capable management.



HACKNEY STALLION, ESTANCIA CHAPADMALAL.

Hard work under scientific direction was the rule which governed the farming operations throughout, and labour under such conditions will ensure success anywhere. There was nothing that appeared to be extraordinary or phenomenal about the outcome of these great farms, if we except the wonderful response of nature to the calls that are made on the pasturage. I am aware that this is not altogether peculiar to Argentina, but in that

country it is extraordinary, and the secret of it is the secret of her wealth.

One well known estancia (that of Sr. M. A. Martinez de Hoz) near Mar del Plata on the Atlantic coast, surprised me with the singular nature of its surroundings. The rolling, undulating farm land was almost English in its aspect. Long slopes of yellowing corn followed each other in gentle waves, and reached down to the cliffs which overlooked the sea. Instead of the eternal wire fencing, neat hedges were beginning to partition the fields and paddocks. On the higher slopes were fast-rising stacks of oats—oats of magnificent quality—carried off the field in the peculiar high-wheeled tilted carts of the country (which always look so vastly too big for the horse in the shafts, but which are balanced so evenly that not an ounce of unnecessary weight brings pressure to his back), and stacked as corn is stacked anywhere without the aid of a machine. It was a lovely rural scene. Down away to the right, where the soil was soft on the edges of a stream which rippled gently to the sea, and where rushes and buttercups filled up the cracks in the banks, was the paddock for the Shire horses. They stood about in contented groups, placidly watching our movements, their huge muscular quarters shining in the evening sun, as splendid specimens of living draught power as could be seen anywhere out of Lincolnshire. Further down stream, on drier ground, was a mob of mares (mixed hackney and native by breeding), with their foals; and it was pretty to see the latter already practising the art of high stepping in their infancy. These are destined for harness purposes, and the success of the breed is to be noted in the records of the Buenos Aires Agricultural Society, where prize after prize falls to the credit of the Chapadmalal Estancia. High up on the estate where long avenues stretch away from the house, and the fields

are hidden by the growth of eucalyptus, willow, and poplar, are the cattle and the bulls. The Argentine breeder does not count the cost when he imports good stock from England for breeding purposes. It is not just a good bull here and there that satisfies him. Every leading estancia has a string of them, and they march past the visitor (each with his own special attendant), with all the pomp and ceremony assumed by the stallions



SHORTHORNS, ESTANCIA CHAPADMALAL.

which precede them. To the breeder and agriculturist an Argentine Estancia of the first rank must be an entrancing spectacle. To me it was the outward and visible expression of the great wealth of this remarkable country, and my only regret is that, together with the impressions produced by the sight of much obvious and splendid success, I have none produced by small beginnings—the first struggles of the determined young landowner ere he yet attains to high achievement. I

really only saw the successful end of the venture. But I learned something about grass in this southern district of the Buenos Aires province. Here the *stipa* had of course mostly disappeared, and I gathered a handful of the grass which replaced it. It was clover, cock's foot, rye grass, etc.—all the ordinary grasses of the English hayfield. There was no mystery whatever about their production here. The seeds were introduced from England. The *stipa* had first been grazed down short, then allowed to spring and seed along with other natural grass seeds which are dormant in the soil. The English seed was then introduced, and it gradually asserted itself over the *stipa* which steadily disappeared, without, however, dying out. It lies merely dormant and will reassert itself at the first opportunity.

As we left Buenos Aires for the long run to Mendoza, we once pulled up the "special" for a halt by the wayside and a visit to the estancia of Señor S. Unzué with a famous breed of cattle and much magnificent grass land. A tent was pitched, a brake with a splendid team of greys awaited us; the cattle had been rounded up for inspection; riding horses were ready, and there was the final and additional grace of ladies' company. After an introduction to a curiy-headed prize bull from one of the King's own farms, I much enjoyed a drive over the grass country as a pleasant relief to the railway track. The grass here was a knee deep bed of thick, fat, luscious carpeting. I have never seen anything like it in England; but I met it again in the estancia Las Palmas (to which I have already referred), where there occurs that remarkable feature of grass land equal to 60 sheep per acre.

I once had the honour of an invitation to accompany the President of the Argentine Republic (General Julio A. Roca) on a visit to a well-known estancia (La Germania), the owners of which (like so many owners)

lived in England. The President, always courteous and thoughtful, took care that I really should be able to study the whole working principles of an Argentine estancia with as little inconvenience as possible. On this occasion I saw seventy ploughs at work as if on parade. There was no slackness or hesitation about their manœuvres. They took the field at a good round



AN ARGENTINE COUNTRY HOUSE, LA MARTONA.

pace, and turned over the rich deep brown soil with an accuracy of purpose and precision which was almost military in its ordered regularity. Every now and then the signal would be given; "vivas" for the President were passed down the line, and hats were thrown about, for the President is popular amongst all classes of the Argentine people. Then also I saw with what care and precision big mobs of cattle could

be manœuvred by a few gauchos, and then I discovered that every Argentine political functionary, be he President or Councillor, knew as much about the points of a "cow" as any British country squire.

Estancia life, in its best phases, must be very enchanting. The freedom of it and the space, the elbow room which is so much wanted in England, the absence of the unrestful crowd, and the presence of the sweet pure air of the pampas, are the heritage of everyone who takes to the farm; and to all who choose to work and who can finally look after their business, not only with an experienced, but with a scientific, eye, success comes as a certainty. But Argentina is not the country for the bad bargains and failures of the family to recoup themselves for the destitution which follows idleness elsewhere. A really successful Argentine estanciero would be a really successful man of business anywhere. Even with the best advantages of physique, of energy, and ability, the beginner in the field must earn his own stock of experience before he ventures on expenditure. Three years of hard outdoor life in "camp" is wanted before any young Englishman can hope to run an estancia successfully; and then, at a very modest computation, he should have at least £5,000 to invest before he can hope to make what he would call a "good thing" of it. Without capital all he can reasonably hope for is to rise to the rank of manager—in which capacity a man may live happily and reasonably well, but he will not make his fortune.

English ladies in Argentina generally love estancia life. There is so much of home interest in it, and so little of society functions and the demands of fashionable routine. They ride and they play tennis, and they enjoy a very fair share of all the pleasures and sports which their menkind enjoy. And if they do their duty bravely they will find quite enough of interest and

occupation in looking after their home and its belongings. An estancia is not altogether like an African or Colonial farm. It possesses far more of the charm and quality of an English gentleman's country house. People live as they live in England. They cultivate social intercourse and pay calls when they can; they dress for dinner, they meet for tennis or polo, and they enter-



AN ARGENTINE TEAM, LA MARTONA.

tain hospitably. The houses are well built, well furnished, and well found in all respects except perhaps in the matter of flower culture and gardens. The utilitarian often predominates over the artistic and ornamental in a country where everything can be made to grow. Lucerne will be found growing in rank luxuriance up to the hall door in some of the best places. I have, however, seen gardens artistically laid out with

all the variety of ornamental shrubs and trees which find their home amidst the luxuriant vegetation of Central South America ; but it is not usual, except in those public parks and places which are the especial care of M. Thays, the Director of the Botanical Gardens at Buenos Aires. Many of the largest farms have lately taken up the milk and butter industry which twenty years ago was unknown in Argentina. Some are now devoted to dairying exclusively. The dairy industry of Argentina is destined to achieve a world-wide success. The typical Argentine estancia, ranch, or stock farm, may vary in size from 3,000 to 700,000 acres ; the average may be estimated at about 25,000. No doubt the small estancias often entail much untiring hard labour in lonely and isolated districts on the beginner in the field. It can hardly be otherwise, but it was my luck (good or bad) to see only those which were most typical and suggestive of the growing agricultural wealth and the consequent increasing strength of the Argentine Republic.

Even the passing traveller who notes the rapid progress of Argentine towns, the important works conducive to the public benefit which are continually in course of construction, and the great development of national industries, must acknowledge that the inhabitants of this Republic, whatever their ethnological origin may be, are endowed with the necessary energy for the task of exploiting this ever growing country.

CHAPTER V.

ARGENTINA—PHYSICAL ASPECTS, RAILWAYS AND TRAFFIC ;
THE ROUTE TO CHILE.

THE fourteen provinces and seven territories (the difference in designation indicates a difference in form of administration) that comprise Argentina, reaching through 33 degrees of latitude and 23,000 feet of altitude, contain so much variety of climate and conformation as to render it impossible to select any sample which would afford a fair criterion of the whole.

The sterile stretches of the salt-stained highlands of Los Andes, under clear skies and with rainless atmosphere, scorched by the midday heat and frozen in the midnight cold, where hardly a living thing exists, might very well be compared with the sterile highlands of Central Asia, so abandoned are they in their wide desolation. The long sweep of the Andine Cordillera, rugged and broken, seamed with glistening glaciers and smoothed into broad plains of snowfield, find their analogy in the north-western Himalayas ; but the lower and more southern spurs and the ridges with a crowning of beech and pine and narrow grassy valleys intersecting, with gentle slopes and marshlands on their summits, are altogether Andine, and quite peculiar to Patagonia.

The extreme south is the Scotland of South America. Bleak, purple-topped mountains, long reaches of green hillside, broken patches of brilliant colour, wandering burns and deep flower-strewn grass flats are there, and with

them the gathering mists and cloud storms, the frequent squalls breaking up the innumerable lakes into a sea of frothy white frills such as we know and love so well in the north of Britain. The central stretches of plain which are here and there gently undulating, but flat on the whole with the flatness of the sea, yet gradually shelving downward from the Andes to the Atlantic, with all their magnificent wealth of pasture land and agriculture—these again are Argentine and Argentine only. North of them, between the mountains and the sea, are the sub-tropical forests of Tucuman, of Corrientes, and Misiones, merging into the borders of Brazil, and to the south are the flat-topped, wind-swept, and half-barren “mesetas” or table-lands of the Patagonian plains.

So much has been written and said about Argentina as a pastoral country that the popular conception of it hardly realises more than a vast grass field partitioned off by wire fences into square sections and filled with fat cattle destined for the “frigorifico.” How far this crude conception is true remains to be seen. Pastoral Argentina may extend farther than we know at present, but meanwhile we may draw attention to the picturesque side of the country, in its wildest and most tropical aspects. A good deal of the basins of the Paraná, the Paraguay, and the Bermejo are as yet unexplored, and no one knows the exact nature of the land which exists about the sources of these rivers.

Both the Paraguay and Bermejo are stated to be unnavigable on account of the vast accumulation of trees and débris which block their channels, but the Paraná is well known up to the borders of Brazil. It was here, in Misiones territory, that the Jesuit missions (from which the territory takes its name) once flourished exceedingly. The Jesuits were expelled by the Spanish Government, and the missions ceased to exist. The Indians who had accepted Jesuit teaching, who had learnt to



MOUNT TRONADOR.

clothe themselves decently, to work moderately, and earn enough to keep themselves contentedly, but who relapsed without a check into outer barbarism, have left a moral lesson in the stability of a half-assimilated faith. Nothing is left of those missions of 400 years ago except some interesting wood carvings in the La Plata museum, and the cracked and mossgrown relics of an ancient church. It is in this territory that the Iguazu river joins the Paraná on its left bank. Twenty kilometres (about $12\frac{1}{2}$ miles) from the junction are the famous falls of Iguazu, which may well be called phenomenal not only for the great beauty of their surroundings, but for their magnitude. More than a mile in width, and with a fall of over 200 feet, the whole volume of the river thunders down in a double cascade, sending up thick clouds of spray amidst the dense vegetation of a sub-tropical forest. The attraction of such scenery will tend rapidly to the development of the Misiones territory. Already the great landscape gardener of Buenos Aires, M. Thays, has taken the approaches to the falls in hand. A road of twelve or thirteen miles has been cut through the virgin forest, and every point of view which can give new interest to this magnificent spectacle will be made available. It will not be long before the great falls of South America will be as much of a world's show as those of the North. There is not a province nor a territory which has not its own natural resources and which may not suddenly expand into wealth. Where pasture fails and wheat-growing acres do not exist, there we may begin to look for minerals. Compared to Peru, Bolivia, or Chile, the mineral wealth of Argentina is sometimes reckoned unfavourably. But whilst there is not a single state in South America which has not enormous resources hidden beneath its surface, there is high authority for stating that Argentina is second to none. "The Argentina Republic extends over an enormous area and contains

immense mineral riches," says Mr. H. D. Herkold, the Director-General of Mines and Geology, "which if developed in a proper and economic manner would produce excellent results. In fact it is well known to those persons who have had an opportunity of examining the country in a practical and skilful manner that its mines are more varied, extensive and important than in any other part of South America. But hitherto the want of cheap, efficient and rapid transport from the mountain regions where the mines chiefly abound has been a great drawback. The Provincial Governments are unable to lay down a good system of transports; consequently the National Government has now turned its attention to this most important subject and is about to provide good and efficient modes of transport." Shortly, branch mineral railways will be constructed from the main trunk lines to some of the principal mining districts and this will give a great impetus to the mining and metallurgical industries, but the application of such system to all the mining districts must be a work of time and very costly. Thus the mining development of Argentina, lies much in railway extension.

More than 17,000 miles of railway in a country possessing less than five million inhabitants is a record which is only beaten by Canada and the United States, which can both show about 5,000 miles for every million of people they possess. In actual length of line Argentina stands ninth on the list of nations, and in all matters affecting the comforts and conveniences of travelling she can hold her own with any of them. There are only two classes for railway passengers—first and second—or it would be more in accordance with English ideas to say first and third. In countries where very long distances have to be covered, involving days and nights of travel, the space provided and the conveniences have to be more carefully attended to and better regulated than in our

short-running English railways. It is this which leads so often to the conclusion that railway travelling in India, for instance, or in Argentina, is so much more luxurious than in England. There is no unnecessary extravagance in the appointments of such a line as the Buenos Aires Great Southern of Argentina. It is the natural sequel of its geographical position that it



A PICTURESQUE PART OF THE IGUAZU FALLS.

should be well provided with accessories which are not always found either in English railways or in the great through-running trains of the Continent of Europe. Railways in Argentina are modelled on the United States pattern and system, and no other would be applicable to lines of such length. On the whole they pay well—on some lines magnificently—and it may be gathered generally from the opinion of all classes of railway

officials that when they don't pay there is a substratum of bad management to account for the failure.

Although much has already been done towards rendering Argentina an easily and pleasantly traversable country, much yet remains to be done. No complete trans-continental line exists at present. The Uspallata extension from the North-Western, which is eventually to connect Buenos Aires with Santiago, is far from complete, and the engineering problems which have yet to be encountered on the Chile side of the pass are formidable. But this is not the only trans-continental line of the future. There are easier passes, possessing far more practicable grades, to be dealt with at many points on the Andes than at Uspallata, and larger problems even than the connection of the capitals of Argentina and Chile to be considered. The route from Europe to New Zealand and Australia, for instance, and the acceleration of the mail service to those colonies—these are Argentine railway problems, and on this solution depends a good deal of the future development of the country.

The Argentines are undoubtedly a travelling people. They never walk if they can ride. In the country they are often in the saddle before they have learnt to walk. They take to trams in the towns, where the regulating and adjusting of tram lines in combination is a science. Ten companies (including the electric company) divide Buenos Aires and its suburbs between them, reaching out to fifteen miles from the city. Every main street has its tram line with the exception of one or two of the most important and most frequented. The prevalence of tram lines in the roadway leaves but little space for carriages, and the constant interruptions caused by the cross traffic striking at right angles at the innumerable corners of the squares or "blocks," is not only a terrible tax on the driving public, but a strain on the resources of the police who regulate the traffic.

Some years ago it was calculated that the tramways of England carried a number equal to the entire population of the country in about one month. In Buenos Aires the entire population was then carried in about four days, and consequently, comparing population with population, and mileage with mileage, the proportion of the population which uses tram cars was 66 times greater in Buenos Aires than in the United Kingdom. Judging from the crammed state of the cars which follow each other in long procession through the streets this proportion has been well maintained in late years; but there are nevertheless symptoms that the maximum of travelling by this special means of conveyance has been reached.

As the North-Western Railway approaches its terminus at Mendoza the scenery of the Argentine pampas changes very rapidly. Mendoza is the best irrigated province in the republic. Long lines of poplars indicate the position of the canals, drawn from sources in the Lower Andes. Vegetation becomes more prominent and more forcible as we approach the mountains. First there is a natural growth of a salt scrub replacing the grass flats, and it looks bright and fresh interspersed amongst the sombre bushes of tamarisk and acacias. Then an occasional vineyard with a thick growth of well-ordered plants and small water channels with green edges. Soon all the country wears the familiar aspect of artificial cultivation—interspersed with willows, poplars, tamarisk, little water-channels, stony beds of dry nullahs waiting for the rains—all under a dull yellow haze which tells of heat and dryness and veils the empty spaces in the landscape.

Mendoza is not the Mendoza of Spanish foundation in 1561. That lasted 300 years, and was completely destroyed by earthquake in 1861. I have met a man who was a survivor of that terrible catastrophe. Nearly all his family perished, and he was himself rescued with

difficulty. Even in these days of West Indian volcanic destruction, such a complete annihilation of a large and flourishing township strikes one with amazement. There was hardly a house left standing. The present Mendoza is new, and it looks it. The streets appear unfinished and the houses stand in irregular and uneven rows on either side of them. The long avenue of the central boulevard has none of the grace of mature age, and the by-ways are but incomplete and muddy tracks, leading to unknown surroundings.

The "Bodegas," or wine making establishments of Mendoza, are its most attractive feature. A short drive from the station took us to one or two of the principal bodegas, which appear to carry on a large and successful trade in the peculiar wine of the country. It is a rough produce, and it never travels far. Nearly the whole consumption of Mendoza wine is effected in the two provinces of Buenos Aires and Santa Fé. Ordinary Mendoza wine is hardly meant for the cellar. It does not keep for more than a year, and in quality it much resembles those crude productions of Spain which one recognizes on the tables of the South American liners, but which do not appeal to English taste. Superior wine is to be found at Mendoza, but it forms no large item in the wine trade. There was one feature in the vineyards, noticeable by reason of its peculiarity. In the centre of each large field, an instrument which looked like a huge funnel or blunderbuss, was set up endways with its wide mouth pointing to the sky. It was, indeed, a blunderbuss of a special pattern, adapted for firing blank charges at thunderclouds in order to avert the plague of hail. Hail works destruction in vineyards all the world over; but it appears to be only in Italy and at Mendoza that this system of precipitating rain (and thus forestalling hail) is adopted. It is said to be most successful, but I understood from an owner of vineyards

that it is only successful under certain conditions. There must be a consensus of opinion on the subject amongst wine growers, and the instruments must be spread over a fairly wide area in order to produce any certain effect.

The short halt at Mendoza was sufficient to introduce a new branch of the military service to our attention—a most important branch—the mountain artillery. As the four batteries filed along the boulevard under the chequered shadow of the trees they looked smart and serviceable, well equipped, and well found both in men and mules. The men were distinctly above the average Argentine in physique, and some of the mules were splendid animals. They form a new feature in the Argentine service, and it is certainly remarkable how soon both men and animals have been trained into all the outward appearance of smartness. Each battery included six guns of the Maxim-Nordenfeldt pattern turned out by Krupp. The four batteries are under the command of a lieutenant-colonel, the complement of officers to each battery being one captain and three lieutenants, with about 150 men per battery. The uniform of light blue and white was perhaps a little gay for artillery, but it was most effective for parade purposes. The batteries were brought into action just under the hills outside Mendoza. There was no hitch in the proceedings such as might have been expected with recruits so recently trained to the rôle of gunners, and the shooting appeared to be straight and effective. It would almost seem as if gunners, equally with cavalry, are “born, not made,” in Argentina.

Naturally one expected to hear from the military officials of Argentina some expression of disappointment at the prospect of peace after such elaborate and expensive preparations for war had been completed; and undoubtedly the disappointment existed, but it was unexpressed. There was throughout the service a spirit of

self-contained reserve in speaking of the chances of war which impressed me greatly. It was not mere politeness. It was the soldierly absence of all self-assertion or brag—a quality which I am bound to say is not always conspicuously absent in the Argentine politician any more than in the politicians of other countries. It may be assumed that the soldiers of the republic know full well that the business of war stands apart from politics. And here I may say once for all, that, having crossed the Andes and having lived on intimate terms with members of the Chilean navy, having often discussed matters of material interest with their leading engineers, both civil and military, and frequently referred to the probable course of action in the event of a war with Argentina, never once did I hear from either Chilean or Argentine officer an expression indicating the smallest wish for war; never once did I hear on either side one single word impugning false or unworthy motives to the trans-Andine neighbour, or suggesting that he could be other than an honourable and worthy foe in the field, should it so happen that he was to be met as an enemy by land or sea. Of course I am not speaking of the rank and file of the population. I only wish to record a passing tribute of admiration for the tone which pervades the higher ranks of military and civil life in these States of South America—a tone which is in such striking contrast to some of the lamentable exhibitions with which we have lately been astonished on the Continent of Europe. One cannot but feel that where such a spirit as this exists there is behind it calm consciousness of strength with no want of appreciation of the strength of others; a knowledge that there is no royal road to victory, and that ill-considered expression of opinion does not befit a subject which may be of momentous interest in a nation's life history. Remembering many things which I have heard and seen on both

sides of the Andes—things military and naval which are not usually unfolded to the sight of any casual visitor ; remembering too the quality of those gallant gentlemen who were kind enough to show them to me—I thank God there is never likely to be war between them.

From Mendoza there starts a metre-gauge railway (the trans-Andine) up the barren valleys which lead to the Uspallata pass. Over the rising slopes which border the foothills, between stony unprofitable shelves of detritus and a scanty scrub of salt bush and acacia (growing scantier with the rise of the country), the rail runs easily. It might be a tract in the Baluch lowlands, or in the South African Karoo that we pass over—but for the frequent cactus. As we rise higher the hills grow to greatness, the landscape becomes variegated in colour, marbled on the hill-side with splashes of pink where the granite outcrop occurs, and powdery white about the lower slopes. But the prevailing tint is red. Bush there is little or none, but the feathery pampas grass fits itself into cracks and clefts, advertising its existence with waving plumes. Farther up the line, where it twists in and out of frequent gullies, and breaks into ladder-rail to lift it over steeper grades, the walls of the valley approach each other. The river, smaller and swifter, and no longer meandering from side to side of the flat bottom of a slab-sided cañon, becomes white with the milky outflow of the glacier, and the stone-strewn sides of the slopes above it stand at steep angles. Now and then a perfect fan, smoothed and rounded, radiates out from a crack in the mountains, and down its steepest slope (just where the water-parting should be) is cut the water-course, defying all ordinary problems of gravitation and offering despair to the topographer. On the whole, I must confess to disappointment with my first view of the Andes. I did not expect Himalayan scenery, but I did expect something of the softer charm which

radiates everlastingly from the pine-clad summits of the European Alps.

In March, 1902, the Argentine section of the trans-Andine line ended abruptly at Puente del Inca (the Inca's bridge), where a remarkable natural bridge spans the river, and which is necessarily (in this country) attributed to the Incas. The Incas are to Chile what the Arabs are to most of Asia. If there is to be found a relic of semi-civilization, indicating that the spirit of scientific engineering was alive in former days, and that it compassed schemes of road-making, irrigation, or building, it is as certain to be attributed to the Incas in the West as to the dam-building Semitic in the East. The only traces that I could discover of any tradition of that triumph of agricultural art, the cultivation of the mountain slopes by terracing and levelling, is to be found in Peru. It is quoted there as the final proof of the superior development of the human faculty for construction in times gone by; and this terracing, together with the dead-straight roads of the Incas, and the really admirable adaptation of certain forms of mud construction to irrigation, undoubtedly does indicate a far higher degree of intelligence once existing than is to be found amongst the Indians of South America in the present day. But this only proves (if proof were needed) how much older, and how infinitely wiser, is the East than the West. History and tradition alike fail to carry us back to the time of the great bridge and bund builders in Eastern lands that now lie bare and desolate, desiccated and sun-cracked under the revolving influence of the world's changing conditions of climate; countries where no water is, and where it will to all appearance never be again. As for the science of making use of all the water which nature yields in dry places, and of all the soil that can be reclaimed from her sterile hill-sides, the modern Chinese, Afghan, or Persian husbandman would laugh

Africa and America alike to scorn through all the ages; nor can our most accomplished irrigation engineers even now teach the Asiatic anything new that may be done with the spade.

However, the bridge of Puente del Inca has nothing really to do with the Incas. It is a curious natural feature that few people take the trouble to go and see. There is a very fairly comfortable hotel here, but the place and the hotel have been already left behind by the railway, which now reaches to Las Cuevas, just under the smooth slopes which entail the final struggle to the windy summit of the pass. When we passed that way in 1902, a night at the hotel and a drive in the very early hours of the morning was a necessity of the situation. The early drive was cold, and the party packed into the wagonette (drawn by four mules abreast) was too cold to be interested in the surroundings. The sky was clear and the stars intensely brilliant. At Las Cuevas (the present terminus) a change of animals was necessary, and the rest of the drive was but a weary drag up a dusty series of zigzags to the summit, nearly 12,000 feet above sea level.

In March, 1902, the roadway, which dropped in a twisting course from the summit of the *cumbre* to the first flat on the Chilean side of the Uspallata pass, was broken up by flood and avalanche, so that the descent was made on mules. Under more favourable conditions this roadway is a very well-graded and well-engineered driving road, and the usual process of descent is the same on either side the pass. But the approaches on the Chilean side are far more formidable from the engineering point of view than they are from the Argentine. The final ridge of the main water-parting has to be tunnelled to complete the railway, and on the Argentine side the line has already reached the tunnel mouth near Las Cuevas; but on the Chilean side it is difficult to trace the course of

the underground alignment. The exposed surface of the mountains presents but a vista of broken, bleached, and scarred hill side, with long sweeps of loose detritus, split stones, scattered boulders, and all the signs and symptoms of perpetual shingle and mud avalanche. The grade of that long interior tunnel will be steep, and nearly every engineering device known to mountain railway experts will be required to effect the drop to the gentler slopes of Juncal. The progress of the trans-Andine railway connecting Buenos Aires with Santiago will be watched by many with much interest. At least half-a-dozen other comparatively easy passes could be mentioned, where no engineering difficulties of any great significance would have been encountered; but then Buenos Aires would not have been in direct connection with Santiago by the shortest possible route, and this is rightly regarded as an essential feature in the first great trans-Andine system.

There will be other lines, and the Atlantic and Pacific will ere long be as securely linked together in South America as they are in the North. Then in all probability will the mails from England to Australia run through South America, cutting short the present distance by about 1,000 miles, and about three days' journey. Then, also, will there be a certain flow of European migration across the breadth of South America, and the ports of Argentina and Chile will become as familiar as Marseilles or Brindisi.

Juncal is but a halting-place similar to Las Cuevas, but many miles below the pass. There one can dine or sleep if need be. At Juncal we took carriage to the present rail end of the Chilean narrow gauge system, and, once on the rail, we halted not till we reached Santiago. From the Chilean rail end (which is nowhere in particular) to Las Cuevas on the Argentine side of the pass is about nine hours' drive (say fifty miles) with Juncal as

a midway halting-place. That drive to the roadside station of the narrow gauge line was delightful : a broad, flat, white road, with easy grades ; a gradual descent through flying clouds of dust to the sweet valley of the Aconcagua ; a gentle change from the snow-patched crags of the summit and the stone-strewn slopes of the landslips below, to a tangle of wild green things amidst which the tall fat spikes of a red-haired cactus stood up stiffly and strangely. It was all impressive, because it was so new, and so unlike anything that I had seen before. There was a certain familiarity about a rope bridge, across (or along) which an old woman was hauling herself slowly as she sat in the pendent wire loop. It was barbaric and hardly expected ; and the galloping horses, driven in a circle over the wheat spread beneath them to be threshed, was another quaint glimpse of mediæval methods surviving in a modern world. We had seen the peak of Aconcagua as we crawled up to the Uspallata pass in the early morning. It was a blaze of scarlet against the deep blue, a vivid exhibition of contrasted colour, but not an imposing peak otherwise. Its height is about 23,000 feet above sea level (I say "about," because the results of triangulated values so nearly approximate to 23,000 that the smallest variation in the assumed value of the refractive correction would send that result either above or below the 23,000), a respectable altitude, but not sufficiently above surrounding altitudes, nor sufficiently isolated, to give eminence to its somewhat commonplace outlines.

Close to the spot where the rail end invites travellers off the dusty road to the dustier accommodation of a narrow gauge railway, there is a remarkable feature in the construction of the line. A rift has been split in an intervening ridge, and the river waters are concentrated in a narrow, dark, deep space through which they swirl dimly into the light beyond. Those who know the

Indian frontier may remember the Chappar rift on the line to Quetta, where the railway spans a shadowy gorge in the mountains (split across the axis of them), which transmits the drainage of the mountain valleys from one side of a range to the other, and where the waters disappear for a time into mysterious depths as by magic. It is the same on this trans-Andine line. The gorge is not so deep perhaps, and there is not so complete an effacement of the river, but the surprising suddenness of its disappearance is very similar, and is due to similar mountain structure.

Once on the narrow gauge line a pleasant slide down the curving valley of the Aconcagua is an introduction to the luxuriant beauty of Central Chile. The lower Aconcagua valley is filled to overflowing with cultivation, and the wealth and strength of it is a strong contrast to the sterility of its upper reaches. Here were willows, poplars, and fig-trees, crowding round orchards of peaches and fields of Indian corn (maize), wheat and hemp. It was late autumn and the wheat was already gathered for harvesting, but the masses of fruit still clung to the trees and coloured the landscape with blotches of red. It was, however, very noticeable that amongst all the variety and spread of green luxuriance there was nothing aboriginal, or indigenous, amongst the trees, and this is a feature which may be said to be common to all South American scenery apart from its forests. The barrenness of the pampas of Argentina is now and then accentuated by a single ombu—a tree which is certainly not to be overlooked, and which is not unlike the banyan of India in appearance. The ombu stands black and round and solitary in the great plains; a landmark for miles around, and the haunt of insects innumerable and of more living things that are generally welcome to civilization. Hence the ombu is not so much cultivated as its splendid spread of shade and its magnificent proportions would

warrant. And there is the humble Tala, a ragged-looking tree, with rather thin foliage and most irregular shape (not unlike the olive), which occasionally masses itself into something of a natural wood on the banks of the Paraná. But the plains of Chile do not even know the ombu or the tala. I doubt if there is an indigenous tree of any significance ; and the inevitable result of the



INDIAN SQUATTERS.

introduction of rapidly-growing trees from other lands—trees such as the eucalyptus, the willow, the maple, the poplar and the plane—is to reproduce much of the landscape impressions of those lands in which they are well known, and where possibly their introduction may have been almost coeval with their adoption by Chile. One could not see the stiff rows of poplars streaking the stony slopes of the eastern Andes near Mendoza without being forcibly reminded of the Indian frontier ; and

the plains of Chile round about Santiago might be the plains of Afghanistan round about Kabul. Standing on the slopes of the hills near Kabul, where Baber's tomb overlooks the Chardeh valley, and the flat range of the Hindu Kush fills up the western horizon; where interlacing lines of poplars chequering the purple and yellow fields mark the course of the irrigation channels; an impression once drifted in upon my mind of a land of promise set in the midst of barren hills, specially designed to illustrate man's ingenuity in making green things to grow where no green thing had been before. It was the wealth of the poplars and the willows which produced the impression, contrasted with the sterility of the mountains which formed their background, and which were only faintly visible through the summer haze, with just the glint of snow patch here and there. The impression was reproduced with the first view of the plains stretching from the foothills of the Andes outwards to the Pacific. For twenty-five years Time might have stood still, and Chardeh, Maidan, and the road to Ghazni were all back again before me.

The narrow gauge line terminated at Los Andes. Here we struck the 5ft. 6in. gauge, and were rapidly transported to Santiago, with an interlude of dinner and crowded reception at the junction for Valparaiso. The journey had taken us three days from Buenos Aires. A little more than a year later a return journey was made from Santiago to Buenos Aires in fifty-three hours—the only difference in the matter of transit being the advance of the Argentine section of the trans-Andine line from Puente del Inca to Las Cuevas. The time is a record, but will not long remain so. The journey will be possible in forty hours when the line is completed, and the busy crowd of trans-American travellers shaping their shortest course for Australia will not be content even then.

CHAPTER VI.

SANTIAGO.

SANTIAGO, the capital of the Chilean Republic, has not kept pace with the times. No boom such as led to the adornment and advancement of Buenos Aires has ever poured temporary wealth into the municipal treasury of Santiago, and there are many indications to the casual observer that in some particulars at least economy has been permitted to tread too closely on the skirts of sanitary prudence. The Alameda, that magnificent central boulevard which stretches from the railway station to the hill of Santa Lucia, shaded by a fine avenue, and decorated with statues of national heroes, will be a pleasanter resort on the still evenings of a hot and busy day, when the open channels of gurgling water that border it are purified and insanitary zephyrs no longer unpleasantly arrest the passer-by. The streets of Santiago (resisting all efforts at reclamation by means of wood or asphalt) are still in the early stone age. Cobbles of immensely hard and enduring construction replace "macadam," and fill the ears of the traveller with vibration and his body with bruises as he drives over them. But having mentioned that the sanitation of the city leaves much to be desired, and that the streets, and the roads into which the streets lengthen, are hardly up to date, there is much in Santiago which is very attractive, and a great deal that is impressive. The city is laid out in the usual Spanish

blocks and squares, and the streets are all dead straight, as if the interest of a long vista of perspective were the main feature to be achieved in their construction. The houses contain much of the old Spanish style of flat front and balcony, often with a certain air of outside aggressiveness which tells of times when strangers were objects of suspicious scrutiny. The interior construction with the inevitable "patio," and the grace of trees and shrubs and shade on which the whole household life appears to centre, are the same as we find in all Spanish-American towns. No place affords a better view of the city than the hill of Santa Lucia at one end of it. Santa Lucia is the soul of Santiago. Near one end of the Alameda this little solitary hill is upraised, and the story of the town seems to gather round its feet. The bones of early Protestants (denied a resting-place in Catholic cemeteries) were once collected and buried here, in times of intolerance long gone by. I believe they are there no longer, but still a quaint monument stands to the memory of those who died "exiled from earth and heaven." The hill is now the favourite resort of the Santiago population in the cool of the evening, when the dusty air freshens in the breeze between the Andes and the sea. It has been terraced and carved into winding walks which circle round it to the summit, and finish with the inevitable summer house at the top overlooking the equally inevitable restaurant just below. There are marble staircases, and a wide sweep of magnificent architectural construction including terraces, fountains, gardens, and ascending balconies, which form an entrance almost too magnificent for the little hill to support. The fancy of the municipal architect has been allowed free play and it is a fancy which works on popular lines, which approve of statues painted green. Green goddesses repose in leafy bowers and a green lion (once a homely bronze) threatens the passer-by with scarlet mouth and white



AVENIDA DE LAS DELICIAS, SANTIAGO.

fangs. But if art may present points to criticism, nature is not to be denied. The beauty of the gardens of the hill lies in the wealth of its shade and its vegetation, and from the little wooden platform of the summer-house on the summit, the city reaching outward towards the Andine Cordillera appears to be set in the midst of a scene so softly beautiful as to recall visions of far-off Kashmir. In the dusty haze of a March evening it wears a prevailing tint of brown. Streets, roofs, and trees alike, seem to be washed-in with a soft brown tint taking purple shadows in the centre of the square-cut blocks, where trees peep out marking the position of the patio. Long and straight the streets run out to the faint gleam of the river where the massing of foliage testifies to the existence of the Parque and the Ricoleta. Beyond that is the sweep of the central valley of Chile leading up to the slopes of the Andes. Tall, stiff rows of poplars in diminishing perspective stretch outwards beyond the city to the rise and fall of the undulating waves which betoken the last folds of the Andine foothills. The Cordillera itself seems infinitely far—so faintly is it outlined in the autumn haze—a grey silhouette against the eastern sky and no more. Only when the sun goes down and the sky becomes streaked with red do the shadows between the city and the mountains gradually deepen, and then a rose light suffuses the higher slopes, breaking into a positive brightness when it catches a patch of snow. The flat reaches of rich Argentine plain know nothing of trees. The beauty of Buenos Aires is the artificial beauty of a well-cut jewel. That of the capital of Chile has (in the old world value of its setting) a value which none can impair and which renews itself from year to year and from generation to generation. The city itself is only impressive in parts. The shops are good, and many of them would attract more than passing attention if there were more room in which to see them.

But the pavements are narrow, and the crowded streets afford little opportunity for anything more interesting than the process of picking a devious way along them. Driving in Santiago is a penance exacted by a municipality which tried the effect of wood paving, but found it a failure because an intensely dry atmosphere, combined with sudden changes to moisture, proved absolutely destructive. But why should cobbles be the only alternative ?

On the other hand the tram reigns supreme. Everybody in Chile takes to the tram. The streets are given over to it, and the fares are rated so low that even with the entire population of the city riding every day of the week the tram companies can barely be made to pay. For five cents (less than one penny) I believe it is possible to compass a distance of nearly seven miles. The spirit of republicanism is incarnate in the tram. All the conveniences and pleasure of locomotion are given up to it.

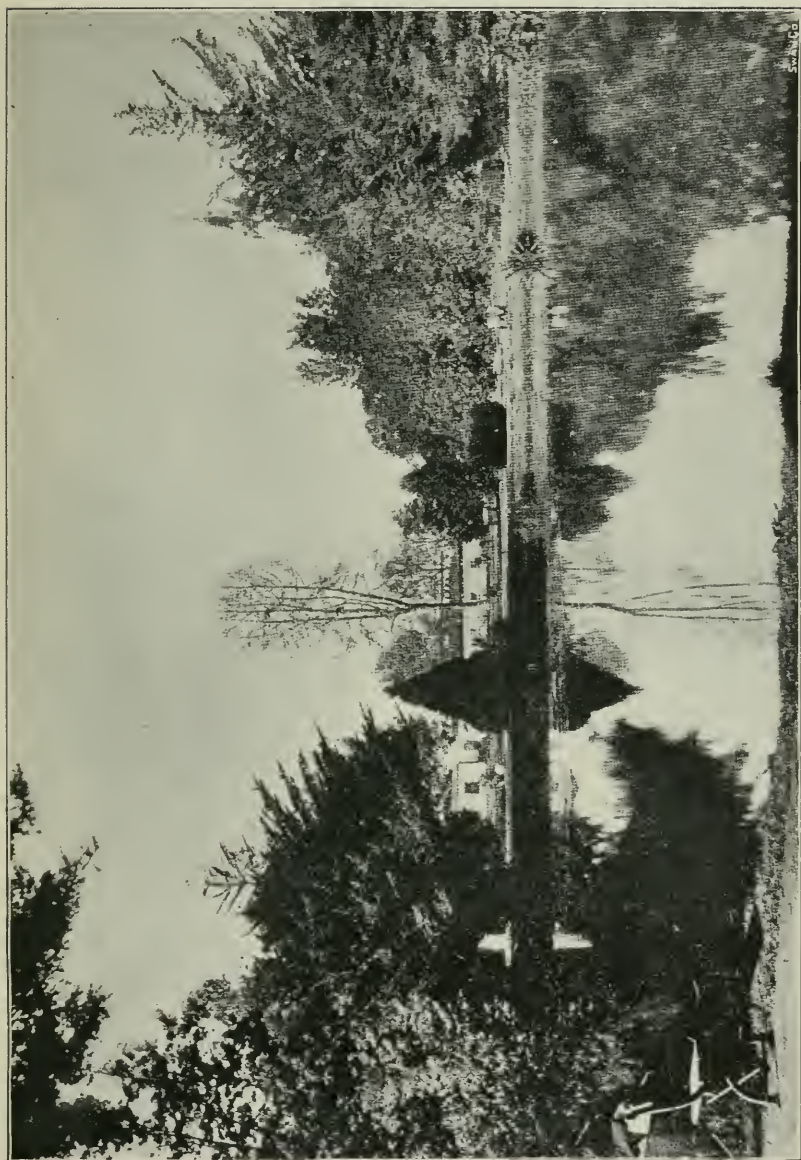
There are many fine houses and public buildings, and some really beautiful plazas in Santiago, but the houses must be searched for, and, as a rule, the beauty of them is not that of outside architectural grace. The Plaza del Armas is very impressive when the day wears out to an end, and the purple sky becomes pricked with stars, when the artfully arranged electric lights throw sharp shadows from the palms and statues and fountains of the central promenade, and sharp lights on the smart dresses of the ladies and the fripperies which bedeck their children. All around the Plaza stand buildings which are worthy of this central show of the Santiago summer day. The Cathedral at one corner, with its silent statue set on high, seems to dominate the noisy crowd below ; the post office and the municipal buildings are all worthy of the capital ; and the arcaded lines of shops which flank the wide streets are quite in keeping with the architectural grace of the scene.

In the park and the public gardens of Santiago are magnificent trees and excellent opportunity for the study of arboriculture. A very fine museum and a school for agriculture are not the least of the advantages which the practical-minded government plants within reach of the capital. There is nothing which Chile wants more, or which will repay its maintenance with better interest, than agricultural education ; and there is no feature of the national character of the Chilean more prominent than his love of nature, of gardens, of flowers, of scenery, and of easily developed beauty. It was my privilege to see one or two of the best private estates near Santiago. An easy drive (easy as regards distance only) on a Sunday afternoon took me to a very old estate, where extensive gardens spread out into avenues of magnificent oak trees and ended in vineyards. The lawns and garden landscape immediately beneath the wide verandahs were suggestive of the early days of landscape gardening, the charms of the place being its quaint irregularity and entire absence of stiffness. Another ancient family seat, a little further removed, was perfect in its appointments of picturesque colour and artistic arrangement. Magnificent trees (as usual) overshadowed sweeping levels of lawn watered by little trained rivulets running to fountains. Here was a practical proof—an object lesson—that there is hardly a tree which grows, or a flower which blows, which may not be successfully cultivated in Chile.

But our present business is with Santiago. Most charming of all the surroundings of the city (in spite of dismal associations) is its Campo Santo. There is little of architectural significance (although there are certainly one or two mausoleums of very ambitious and very effective design to be found there), and there is very little of the art of the sculptor to arrest one's attention in these lovely gardens. It is the effective

combination between the stately outlines of the family mausoleums, the rounded forms of the occasional statuettes, and the grave, strange beauty of the dark cypress (making the distant Andes appear faint in the haze and the foreground flowers blaze into prominence), which, together with the long vista of the well-kept walks centering on a great bronze crucifix, render the place so impressively beautiful. Nature and art here combine. But in the combination nature excels. The silent beauty of mountain and sky and the deep shade of solemn trees relieved by the brightness of symbolical flowers happily enshrine the spirit of the place.

A century and a half ago, when Lieutenant Byron found himself half prisoner and half guest in Santiago (held there till opportunity should occur of shipping himself to England at the end of an adventurous voyage), Santiago must have been an advanced town. It was a gay town, and young Byron (who enjoyed personal advantages which are still traditional in Chile) tells a graphic story of the freedom and delights of Spanish society and the charming ways of Spanish ladies. The young sailor of the present day would probably find an even more cordial welcome, but he would certainly miss much of the frivolity of eighteenth century customs. The Chileans strike one as a sober (or as the Scotch say, "dour") race on one's first acquaintance with them. There is something which is almost Scotch in the directness of the Chilean address, the almost stately courtesy and the absence of fuss or flutter. There is no straining after effect, no suggestion of superiority. You are left to form your own opinions without local advice or prompting, and the general impression left on the mind is that your opinion will concern no one in Chile any more than it would in England. "We would welcome you as one English gentleman would welcome another" was the keynote to the reception of the Bound-



QUINTA NORMAL, SANTIAGO.

ary Commission party, and at the same time a high standard was set of the nature of an English welcome. If the Chilean has a weak point, it is his appreciation of good cookery and champagne. Both are, as a rule, excellent, and the result was that there was too much of both for the good of an English (or Anglo-Indian) constitution.

The courtesy which graced their banquets was carried into their business discussions. In reference to the great question of the day, nothing but the most dispassionate tone was adopted. It may perhaps seem that on a very insufficient basis of actual experience I have ventured to form an opinion on certain national Chilean characteristics. That is not exactly the case. I am only recording first impressions—not opinions—crude and superficial though they may be. Nevertheless, nothing that occurred during all those delightful days which I passed as a Chilean guest has ever disturbed those first impressions, and as I profess to record nothing more, I may be permitted to record them fully, freely and faithfully. The impression which has lasted is that the Chilean is more Anglo-Saxon than Latin in his national proclivities, and more British than Teuton in his Anglo-Saxon idiosyncrasies.

If there is an atmosphere of respectable antiquity about Santiago it envelopes its inhabitants as well. Many of the foremost Chilean families are very old and very Spanish, claiming direct descent from the early Peruvian Spanish. Others are mixed by descent with Araucanian blood (the blood of those Indians who still occupy central and part of southern Chile), and some indeed proudly claim to be of almost pure Araucanian descent. The foreign element is as fully predominant in Santiago as in Buenos Aires. British, French, Germans and Basques form a large section of the Chilean population, which does not include much of the Indian element.

The English language is frequently heard. Chileans seem not only willing but pleased to claim affinity with England. Many of their institutions are modelled on English forms. The navy, especially, is quite English in tone, and has probably been so since the days of Cochrane. It is difficult to believe that England is as unpopular as most writers pretend on either side the Andes. Ask the Argentine, or the Chilean, whether the Englishman is generally popular, and he will say, "Yes." Ask the Englishman (or, particularly, the Englishwoman) in either country the same question, and the answer will be, "No"; and the first inevitable conclusion will be that the politeness of the native prevents him from stating the blank truth. But a little analysis of the subject will show that the English people are certainly those amongst foreigners who are received on the most cordial terms into native society. If they do not associate on friendly terms with the native families it is their own fault, and it is the same fault of exclusiveness which makes them unpopular elsewhere. An Argentine gentleman once put it this way: "You will find that almost any Argentine girl will marry an Englishman if she likes him—but a Spaniard, or a German, or an Italian? Well, they seldom present themselves in any form which would make them sufficiently attractive." As I am only an impressionist I may record my opinion that Englishwomen are rather at fault. They are more exclusive, more sensitive, less inclined to study language and character, or to take the trouble to cultivate friendly relations with the native families, than men are. But it is difficult to generalise on such a subject. Perhaps it would be more accurate to say that of all foreign peoples the English are the least unpopular, than to suggest that there is any active principle of affinity between them and the educated classes either of Chile or of Argentina.

It never appeared to me that the Chilean lady was to

be charged with indifference to her household duties or neglect of her position as mistress. On the contrary, I have often been surprised at the extent of her influence in her own sphere, and her knowledge of what lies beyond it. She makes the most charming hostess ; she does not always spoil her children ; she possesses many accomplishments, which, if they are superficial, are at least useful. As a rule she talks English and French as well as Spanish. When she elects to astonish the world by her grace (or perhaps extravagance) in dress she does it well, and she apparently uses few artificial aids to beauty. But she does not affect so much dress as one is accustomed to see in Buenos Aires. It is not the fashion in Santiago to dress for promenade in the mornings. It is quite rare to see anything but the manto (a black mantle which envelopes the whole figure, passing over the head like the Indian "sari") in the streets before midday. Nothing else is allowed in the churches and cathedrals of the town, and as the priest is dominant, and the whole female population goes to prayers at least once a day, the manto is almost universal. The Chilean girl is allowed very little liberty. Not even her Argentine cousins are kept more strictly within leading strings until they are married. Nothing could be in sharper contrast than the position occupied in social intercourse by the girl of North America and the girl of the South. It is indeed difficult to understand how any satisfactory footing is ever attained by a man who wishes to know something of a girl before he can definitely make up his mind to a proposal. She is so hedged about with social conventions which she dare not break through, that it is really no great matter of surprise if the man should prefer, after all, to cultivate the acquaintance of the more approachable foreigner. As the girls of South America are denied the freedom of their sisters of the North in the matter of open and friendly intercourse with mankind,

they have to content themselves with man's distant admiration. Accordingly they lay themselves out for it and expect it. It is no offence at all to stare hard at a girl with an opera-glass. On the contrary, it is the usual preliminary to a more formal declaration of a desire to be acquainted. Men deliberately take up a commanding position in the opera house, or the theatre, and proceed to a personal examination of the ladies as a matter of course. And it is said to be a distinct matter of self-congratulation to the girl who gets the greatest number of these very pointed attentions. I once heard of an Argentine girl who returned from an afternoon promenade and deliberately tore her best hat to pieces, because no one of the men who had been introduced to her that day had remarked how charming she looked in it ! The story is, at any rate, *ben trovato* ; it illustrates the character of the small change in polite intercourse which is expected between young men and young women in South America, and accounts, perhaps, for the excessive freedom of the remarks about ladies which one hears at social functions. To the Englishman the social etiquette which debars him from free and friendly intercourse with the opposite sex appears to be as unnecessary as the excessive freedom of language and manner permitted in the South American society man appears undesirable. To the English woman these conditions are a distinct bar to her enjoyment of native society, and account to some extent for what is usually called her " exclusiveness."

Chilean ladies are no less charming, clever and graceful than their cousins beyond the Andes. They are always unaffectedly amusing, and the advantages they possess in the natural grace of their movements appeal very strongly to the Englishman accustomed to the ungainliness which is born of hockey and tennis. I have often observed a certain picture by Greuse of a lady with her

head thrown back over her shoulder appealing (as it would appear) to someone a little behind her—which is in a strange place. It is in the smoking-room of the Army and Navy Club in Pall Mall. I have always thought the attitude strained, theatrical and artificial, but it comes just as naturally to the Chilean lady as does the grace of her walk and the inimitable style in which she wears the commonplace manto. She could not be ungraceful if she tried.

CHAPTER VII.

THE ARMY AND NAVY OF CHILE—A TALE OF THE SEA.

BETWEEN Argentina and Chile there is but little geographical analogy. The Andes stand as an everlasting wall between the country of broad, flat areas, where the long straight lines of grass land fade to faint admixture with the dim grey of the horizon ; where one sees from the railway line nothing but a broad green sea, starred with dark islets at wide intervals, through which the shining steel stripes of the railway vanish in small perspective so far away and so straight that they seem to pierce the distance as with a point ; and on the other side, a country of mountains, with broken spurs and irregular plateaux sloping down to the western sea, deeply eroded by rivers which make westward from the great Cordillera to the ocean. Chile is a beautiful country to the lover of scenery who first drops into the central valley from over the Andine wall. He sees nothing but the loveliness of combination between mountain and cultivated valley. This greater valley, between the Cordillera of the Andes and the Cordillera of the coast, is but a succession of smaller valleys lying side by side, which rise gently amidst rounded slopes to the Andes, climbing ever upward till they touch the jagged outlines of the foot-hills. Then they deepen and steepen, narrowing into clefts and water-ways where the rush and the music of the ice-cold glacial stream is echoed from granite cliffs and broken stone-

dusted mountain slopes. Between Kashmir in the Far East and the Pacific Coast Cordillera of the Far West there is nothing lovelier than the central part of the central valley of Chile.

But all Chile is not central valley. Chile is a long, narrow maritime country, barely 100 miles wide in average breadth, yet reaching north and south through 38 degrees of latitude, possessing over 2,600 miles of coast, and naturally possessing also a great variety of climate and scenery. The north of it is almost tropical. Here is found most of the mineral wealth of the country—nitrates, borax, silver and copper. But it is so thinly populated that the nitrate fields (those arid valleys which were acquired by Chile at the close of the war with Peru and Bolivia in 1879-80) absorb nearly all the mining population. Easy wages and good times have proved too attractive to the Chilean miner (who, in the middle of last century, was a strong man and knew his trade), and the result has been the abandonment of many less lucrative mineral sources of income in favour of those much-discussed fields, which are regarded by some of the most thoughtful of Chilean citizens as a possession of more than doubtful advantage. Here, in the north, are long stretches of utterly barren inhospitable territory; high sun-dried and wind-swept flats of dreary volcanic aspect, where nothing but an occasional patch of green indicates a small spout of fresh water. The dry-salted altitudes of the Puna de Atacama adjoining northern Argentina, baked by the midday sun and cracked by the nightly frost, dismal, desolate and uninviting, present but few objects of interest to the intelligent seeker after truth in high places.

The history of the first occupation of Chile by the Spaniards in the sixteenth century (prompted by the ravenous thirst for gold which tempted all the earliest explorers to their fate) is but a history of disasters encountered in

the passage of these Andine altitudes between Lima and Santiago, varied by the chequered story of perpetual conflicts with the Araucanian Indians (the same Indians who now occupy the southern provinces) in which the Spaniards were by no means always victorious.

Such is the general character of northern or dry zone of Chile, and it may be roughly estimated to reach down to the parallel of 30° S. lat. within 250 miles of the capital, Santiago. In the mild climate of central Chile anything will grow that does not demand tropical heat. Corn, olives, fruit and wine are the products of a land where no one is ever hungry, and most people eat too much. I have never seen fruit in such abundance, not even in the Tigré delta of Buenos Aires, nor in the fruit shops which border some of the narrow streets of Kabul, nor on the broad shelves of Covent Garden Market. The asparagus of Chile is a thing apart. In size, in appearance, in flavour and in abundance it is unequalled. The resources for irrigation are splendid. At least four-and-twenty mountain-born rivers intersect Chile from east to west, and spread abroad possibilities of cultivation where they run near the surface level of the country. When they run deep in grooves, as is the case south of Santiago, irrigation as yet is undeveloped. But this peculiar geographical conformation gives Chile the command of what is probably the most inexhaustible water power in the world. So far this great gift of Nature has only been utilised for irrigation. The energy which is stored in the rushing snow-fed torrents of the Andes is expended chiefly in watering the fields, or in bubbles and foam, and has yet to be controlled and directed to the many commercial purposes which are compassed by electricity.

Cultivated and irrigated Chile terminates about latitude 38° S. and then commences the zone of forest which reaches southward to the Gulf of Ancud in about lat. 42° .



SEÑOR DR. GERMAN RIESCO, PRESIDENT OF THE CHILEAN REPUBLIC.

The long meridional trough between the two Cordilleras may be traced much farther. It is represented in the Gulf of Ancud and the narrow straits of sea water which divide the island of Chiloe and the Chonos islands from the Patagonian coast. It appears again on the surface where the peninsula of Taitao is united to the main land ; and the remarkable Lake of San Rafael which is planted in the midst of that isthmus may be accepted as a part of it. Then it is lost in a confusion of broken islets and inlets ---about which there is more to be said elsewhere. The forest zone lies between the Bio Bio river (marked by the city of Concepcion) and Puerto Montt, the rising port at the head of the Gulf of Ancud. This is undeveloped Chile---undeveloped in spite of the existence of large towns such as Temuco and the German settlement of Valdivia on its edges. Neither Spaniards (nor Incas before them) ever penetrated south into this district. It has always been the stronghold of the Araucanian Indian, and to a certain extent it is so still. It is (as Señor Don Victor Eastman says*) extraordinarily rich in timber, but there is much more to be said for the forest zone of the central valley than can be expressed whilst outlining the general conformation of the country, and it will be said farther on.

I will only add here that the 291,000 square miles (more or less) which are included as Chile are divided into 23 provinces and one territory. The one territory, Magellanes (not yet sufficiently populated to rank as a province), holds most that was of special interest to the British Boundary Commission. It is in the extreme south. Three and a half million people is the total estimated population of Chile. Great Britain with less than half the area contains forty million ; so there is in Chile, as Mr. Eastman observes, "ample space and work for

* Lecture on Chile delivered at the South Place Institute, London, in March, 1903.

law-abiding and industrious men"—and all that Chile wants is a sufficiency of such desirable colonists.

With the peculiarities of environment which are indicated by the varied features of Chilean geographical conformation—the valleys amongst the mountains, the undulating plateaux, the long outline of the Pacific Coast, the islands which break the southern shore of that coast into an archipelago, and the forest clad slopes of the Andes pierced and intersected by a hundred inlets—we should expect a population of a hardy, vigorous type, essentially a sea-going and enterprising race, inclining towards European characteristics in physical development, loving the independence of the mountaineer, and abounding in that form of candid honesty and frankness which appears to be blown into men by the sea breeze. If we remember the origin of the true Chilean, his derivation from the Spaniard of Peru and from the Araucanian Indian, and note the modifications which might be due to such an origin, we find very nearly that which we should expect to find. The native Chilean born and bred possesses most of these qualities, belonging to a type of humanity from which good soldiers and good sailors are made; and his proclivities generally are towards honesty, industry and courage. Chile has not forgotten her single-handed fight with Peru and Bolivia. The lessons learnt in that war are still studied and remembered, and the victorious conclusion of it still binds her people with a universal spirit of patriotic combination for purposes of war which is strangely at variance with their absolute divergence in matters political. Never was a small population torn to pieces by so great a weight of politics, and never were a people so entirely at one in resenting any outside interference with their interior political dissensions.

Recent history has taught us that Chile possesses all the material in men and equipment necessary for a good

army and a good navy, and we know all the national characteristics of the country are in favour of such a development should it ever be necessary for Chile to support her rights by force of arms. At present Chile maintains no large standing army. Six thousand men constitute the regular force, and this could be readily raised to 100,000 within two months by conscription if necessary. The fundamental idea is the maintenance of what are called in Chile the "clases" (*i.e.*, the non-commissioned staff) in the highest possible state of efficiency, so as to form a nucleus of highly-trained soldiers to distribute amongst the raw levies which would be raised for the field in time of war. Nominally every man between 20 and 45 years of age is liable to his full year's service in the ranks of the army, and subsequently in the first reserve for nine years more. Practically his military training seldom extends beyond nine months, and his efficiency (even in these days of irregular tactics) would largely depend on the direct control of the non-commissioned staff. The "clases" are accordingly retained permanently under instruction, and their instruction is regulated on such German methods as are believed to be the most effective by the Chilean War Office authorities. They are young men (almost boys—many of them) who form this permanent staff, and they are drilled with all the precision of the German military school by German instructors, of whom there are about 30 in the Chilean army. There can be no doubt that the very able German officer (General Korner) who has superintended the military training of the Chilean army since 1888 has left a strong and most useful mark on its efficiency behind him. His trained perceptions grasped from the outset those idiosyncrasies of Chilean character and those peculiarities of national constitution, which could be turned to account in moulding the raw material into effective military strength. With all the insistence

of an apostle of German organisation, he has inculcated the great principles of strict discipline into the teachers and instructors of the Chilean soldier, and he has done this without impairing in any way the popularity of military service amongst an independent and republican people. His photograph may be seen in almost every officer's mess at the Head-quarters of the Army in Santiago, and it is there because the man himself was popular and his military creed is believed in. Recent history teaches us that the fighting qualities of the Chilean soldier are of a very high order. He is heroically brave, and at the same time amenable to discipline. It does not take long to fashion a formidable fighting force out of such material as this

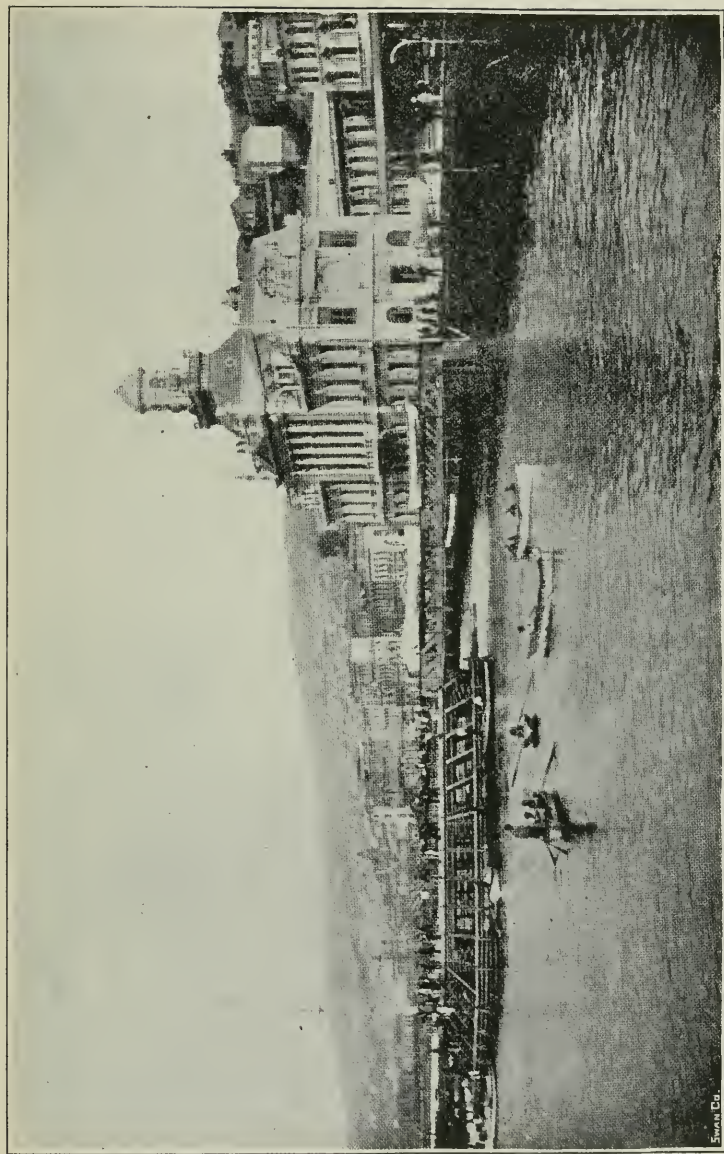
On a dry and dusty morning in March, when the yellow haze of the rainless autumn pervaded the atmosphere about Santiago, powdering buildings and trees and reducing all landscape effects to a flat waste of "khaki," I enjoyed the opportunity of a morning spent with the field and mountain artillery, on parade. The brilliant smartness of an Aldershot battery was certainly wanting about the Chilean gunners; the glitter of steel and the shine of well-polished harness was hardly to be distinguished under the powdery grey coating which enveloped all things animate and inanimate. Occasionally a whole battery would disappear from view inside a yellow cloud as of battle smoke, and then precision of movement had to be taken for granted. But it was impossible to miss the general smart regularity of line and interval, or to overlook the excellent horsing of the guns, or the pace at which they were made to move. It would at any rate take the eye of the professional gunner to detect those unevennesses of drill and evolution which usually mark immature training. I could not see them. If the field artillery bore every mark of practical efficiency so also did the mountain batteries. Here,

however, the process of coming into action was perhaps a little ragged and uneven, although the time was good and the results quite efficient for all practical purposes. As a spectacle in the great Hall at Islington, it might perhaps have been wanting in effect, but as a practical remonstrance, or check, to an advancing foe there would have been nothing wanting at all. The innovation of mounting the gunners on mules and applying the latter to draught purposes, as an alternative to carrying the guns piecemeal, was said to have worked well in manœuvres, and its advocates claimed that on all ordinary hill sides it was the more effective method of the two, bringing the guns into action more rapidly ; but appearances were certainly against it. In the cavalry school all the usual performances of the manège were carried out with precision and pace, but the horses looked light (although I was assured they were not so) and there was little to choose between the weight they carried and that allotted to our own cavalry horses. Cavalry school horses, however, are not generally the best criterion of the efficiency of cavalry mounts. The weak point in the Chilean armour is the want of horses in the country. Whereas Argentina could mount every man in the republic and still retain a respectable reserve, Chile would probably find her reserves fall short of her requirements. I could not dare to enter into the field of disquisition on the subject of Chilean horses. Wherever two or three men are gathered together who have travelled in that country, whether at the mess table or on the march, or even on board ship, there will the respective merits of the different classes and breeds of South American horses be discussed with a vigour which often seems misplaced. From my own short, and perhaps exceptional experience, I should say that a more delightful mount for camp work than a good Chilean "country bred" could hardly be found out of India. If a criticism on Chilean horseman-

ship is permissible, I may add that it seems a doubtful advantage to introduce the clumsy German cavalry seat with German riding systems and equipment into a country where riding is an indigenous and intuitive faculty. No German can ride like a Chilean "huaso"; and for all those practical purposes for which Chilean cavalry are ever likely to be utilized in the field, the country man with his native seat on a country bred mount is the beau ideal of efficiency.

On paper Chilean armed military strength may appear insignificant, but the latent strength of the country is not to be measured by figures. Its foundations are laid in the sturdy spirit of patriotism which has struck its roots deep into the heart of the people in spite of the democratic craze which occasionally splits all Chile into political factions. The long sea-washed shore of its stormy coast, as well as the bold spurs and the rugged outlines of its breezy mountains foster it, and keep it strong and healthy.

Thus it is that confident self-reliance is a distinguishing characteristic of the Chilean sailor. An enumeration of the ships of the Chilean navy, and details of the weight of metal in guns and armour which these ships carry, would only show that Chile possesses a small but very effective fleet which places her as a naval power in advance of all South American States with the exception of Argentina. With Argentina of course comparison is inevitable, and after making due allowance for those reductions and retrenchments on both sides which are the result of recent international agreement, we should be disposed to place the naval strength of Argentina (estimated on the ordinary basis of ships and guns) as superior to that of Chile. But the Chilean navy possesses the indisputable advantage of a sea born and sea faring people from which to recruit her ranks. No country in the world has finer raw material on which to



VALPARAISO.

draw, and it need be no matter for surprise that no country in the world has a more thrilling record of naval achievements with which to enliven the pages of modern history. In most essential respects the Chilean naval service is modelled upon English methods just as her army is modelled on German methods. So smart and so workmanlike are the Chilean cruisers that to step on to the decks of one of them is like stepping on to the deck of an English ship. There is the same strict attention to regularity in details, the same polish and brightness, the same alertness on the part of officers and crew, the same workmanlike celerity in action, whether it is lowering a boat over the ship's side or swarming to quarters. The men generally are small, but powerful and active ; many of them are Chilotes (from the island of Chiloé), whose only fault as mariners seems to be that they never learn to swim ; but all hail from districts within the sweep of Pacific gales and within sound of the everlasting Pacific surf.

On the night of the 5th March, 1892, after an interview with President Riesco at Santiago and a short railway journey to Valparaiso, we left that port to embark on the Chilean cruiser *Ministro Zenteno*, with Captain Arturo Wilson in command and Captain Luis Gomez to second him. I had been much impressed with my brief and plain spoken interview with the President, who is a powerfully built man of commanding appearance and most business-like directness of speech. It was with a deep sense of relief from the preliminary responsibilities of deciding on a definite line of action that I found President Riesco as sympathetic and as cordial a wellwisher for the success of my programme as President Roca had proved himself to be in Buenos Aires. The latter had omitted no opportunity of expressing his personal sympathy, and President Riesco was evidently no less determined that no shadow of

a doubt should rest on my mind as to his own personal approval of the course of action which I proposed.

It was a perfect night when we left the Valparaíso pier to steer our way through the mazes of the harbour shipping to the shadowy form of the powerful cruiser which lay grim and still on the flat waters beyond. The Englishmen of the town (and there are many of them) had welcomed me with the intimate cordiality of Englishmen abroad, and had wished me (with the most obvious sincerity) God-speed and success; and now, at midnight, they were to the front again, assembled on the pier head to give us a last parting cheer and to leave with us a lingering memory of a sympathetic link with home. The many lights of the shipping glittered on the sea and trailed dancing reflections across the twisting ripples as we thus made our first acquaintance with the misnamed Pacific—for amongst all the unruly, boisterous oceans that are included in this world's wide seas I take it that the Pacific holds the record.

Thus did we finally make our exit from civilized South America and start for those outer regions of semi-barbaric darkness which were supposed to be confined within the limits of Patagonia; and thus were we able to face the unknown difficulties which might lie before us with a light heart, born of confidence in the good-will and the strong backing of those authorities on whom the whole success of the expedition must ultimately depend.

The cruiser *Ministro Zenteno*, which had been detailed by the Chilean Admiralty for special duty with the Boundary Commission, offered us a most delightful haven of peace and rest after the hurry and rush of the previous week. She was big enough (3,000 tons displacement) for comfort, and her decks were wide enough for a promenade between the guns, with free

space to make any observations that we pleased. Her officers nearly all talked English, some of them fluently and accurately, and her crew were as smart as a crew could be. They were something more than smart. Some of them knew what naval service in time of war meant; and the meaning of it was written on them. With them was experience sufficient to justify their confidence in themselves, their Captain, and their ship. Captain Wilson had been with Prat in the *Esmeralda* during that gallant naval action when the *Esmeralda* sank with her flag flying, taking the best part of her crew with her. Wilson was among the few that were saved. Commander Gomez had similarly explored the sea depths when the *Blanco* was torpedoed in Caldera Bay, and he had moreover been a distinguished warrior with the land forces against Peru in the war of 79-81.

Amongst men of this sort there is never the outward expression of eagerness to repeat such experiments. Never once, amongst these gallant sailors (who seemed almost as one's own countrymen), did I hear a single word of hostility against Argentina, nor a suggestion that the Argentine sailor could be otherwise than a good fellow whom it would be a pleasure to meet—in action if need be, and if not in action then as a brother sailor of the best sort. In spite of the spirit of animosity which was occasionally advertised by the Press (and which did no doubt animate the breasts of some of the minor politicians of both countries) finding its way (where it never should have found it) amongst the technical advisers and experts of the government, there can be no doubt whatever about the radical and fundamental nature of the affinity which exists between Chilean and Argentine. It is far stronger than any such tie between Chilean and Peruvian (in spite of their original intimate blood relationship), or between any other two Spanish South American republics, who might

be expected to remember that they enjoyed a common heritage of past history. It arises no doubt from the strengthening influences of similar southern climatic environment and the admixture introduced by inter-marriage. An academic admiration of the glorious records of a common history in itself will not keep two countries from an attempt to strangle each other. There must be the impulse of actual existing relationship, and the common tie of mutual every day interest and inter-communication, to foster the comforting assurance that "blood is thicker than water." Otherwise that assurance often gets overlooked. Between Chile and Argentina there is inter-marriage and much constant communication; and when the processes of communication are so simplified and multiplied that every educated Chilean will know "what sort of people" are the Argentines, and *vice versâ*, there will be no more talk of settling differences of opinion by war. War between these two countries is already as much an anachronism as it would be between England and the United States.

In such a good ship and with such good company it would have been impossible to fail in appreciation of the great charm and interest of a voyage in those southern seas. From first to last it was delightful. Over a rippling summer sea, when the Pacific was at its best and bluest, we ran down to the Talcahuano port and dockyards. This is the great harbour of the Chilean coasts and the great place for repairs to the Chilean fleet. A magnificent outer harbour, with a narrow entrance dominated by an island about its middle, leads on to an inner bay wherein it would be easy enough to accommodate the whole Chilean fleet. Without entering into details, it is sufficient to say that the harbour is well protected. Here were several ships of war undergoing repairs, and much business was

in hand. We were conducted by the Admiral in command through the works and introduced to two ships in dock, one of which was the cruiser *Capitan Prat*, French built, roomy, and fitted with much artistic taste; the other was the *Huascar*. The *Huascar* was neither roomy nor beautiful. The grim old ironclad lay dismantled and ugly, battered and boilerless in her last home, with every plank of her, every indented foot of iron armour and turret, still witnessing to as stirring a tale of the sea as ever was told by any brine and blood soaked timbers of England's wooden walls. Of all the many armoured ships that now patrol the ocean highways, has any one such a tale to tell as the *Huascar*? I doubt it, and as from her story is to be learnt something of the spirit of seamanship and action which has guided and animated the naval heroes of the western coasts of America from the days of Cochrane till now, I may be pardoned for reproducing a trifle of ancient history to enliven the dull records of the present.

As one trod the *Huascar's* quarter-deck for the first time, one's eye was caught by something most unusual about her fittings. There was a curious little glazed cover set down on her deck, through the glass of which could be seen a glittering metal object of no particular shape or fashion, which was apparently preserved beneath that cover with watchful care. It appeared to be neither useful nor ornamental, and rather in the way of a quarter-deck promenade. "What is it?" "Oh, that is the sword of one of her late Captains (Thompson), which we have never been able to remove," said the Lieutenant in charge. "You see that Captain Thompson was cut so clean in two by a shot from a shore battery that his sword came away from him and got jammed like that in the deck. The point of it is twisted under the iron clamps beneath and we cannot get it out, so we have left it there." Somewhere about

amidships and near the turret was a small round brass plate let into the planking. "What's that?" "That is where Prat fell. He boarded the ship from the *Esmeralda* with only a few men behind him, and he cut his way aft to this point. Grau called on him to surrender, but he only replied with a shot from his revolver so he *had* to be killed. Grau would have saved him but he wouldn't have it, so he died there."

There were some queer round-shaped dents and some ugly bruises on the smooth iron roundness of the turret. These were souvenirs of an action with two British ships—the *Shah* and the *Amethyst*. "They didn't get her," said the "Sub." The conning tower of the *Huascar* in which the gallant Peruvian Captain, Grau, watched the effects of Chilean shot and shell when he made his last gallant fight against the Chilean warship *Almirante Cochrane*—and lost—I have seen elsewhere. In the military museum at Santiago it is still preserved—a torn and shattered piece of iron plating twisted and smashed into unrecognisable shape just as it was at the close of the action after the gallant hero had been blown to pieces with every man who was with him inside it. Of Grau it is said that absolutely nothing remained.

These are a few of the incidents that the *Huascar* can recall as she lies heavily pondering on the past in the Talcahuano dock, wondering doubtless at the new form of monsters which have replaced her on her own broad seas.

The *Huascar* (1,800 tons) was built in 1865 at Birkenhead. She was fitted with a single turret and protected by iron plating (on the water-line) from $2\frac{1}{2}$ to $4\frac{1}{2}$ inches thick. The turret was of the old roller way pattern. She carried two 10 inch $12\frac{1}{2}$ ton Armstrong guns inside, with two 40 pounders and one 12 pounder muzzle loader on the quarter-deck, and a Gatling on the military top of her one mast. Two hundred and twenty officers and

men completed her fighting strength. In her day, and for her time, she was a powerful ship. She commenced her career as a Peruvian vessel, and being apparently tired of inaction she went into opposition (or in other words revolted) in May, 1877, and started pirating down the Pacific coast. The reasons for such a proceeding are immaterial; but the result of it was that she came into collision with British interests by interference with two of the Pacific Navigation ships. Consequently the British Admiral on the Pacific station (de Horsey) set two British ships, the *Shah* and the *Amethyst*, on her tracks with a view of ridding the seas of a piratical nuisance—a proceeding which resulted subsequently in some acrimonious correspondence between the British Government and Peru. The *Shah* was a 6,250 ton unarmoured cruiser with two 9 inch 12 ton guns and eight 64 pounders on upper deck; sixteen 7 inch guns on main deck; Gatlings in her tops and a full complement of 602 officers and men. Her speed was 16 knots against the *Huascar's* 11. She was thus a far more powerful ship and a faster one than the *Huascar*. The *Amethyst* was an unarmoured cruiser of 1,970 tons, carrying fourteen 64 pounder guns and 226 officers and men, commanded by Captain Chatfield. The two ships working together caught the *Huascar* on May 29th after she had been bombarding Pisagua, and the fight commenced between one armoured ship of light draught and two unarmoured vessels far outmatching her in weight of metal and speed, on a coast line where ports, shipping and shoals were all important factors in a naval engagement. After being foiled by the *Amethyst* in an attempt to get inshore, the *Huascar* stopped in front of Ylo and shewed her teeth. Early in the afternoon the English quarter-deck guns opened with a continuous fire on the *Huascar*, who made play with her one turret gun and the 40 pounder at about a mile. The

Shah could get no nearer. The *Huascar* was far the handier vessel of the two, and the *Shah* was obliged to keep on the move to avoid being hit because she was unarmoured. The *Huascar* made things difficult by placing herself amongst shipping in front of the town of Ylo. The *Amethyst's* guns came into play, but they were of little use against the *Huascar's* armour. The *Huascar* tried to ram; and then a torpedo was loosed at her but failed to reach. At 6.45 the action ceased, the *Huascar* having placed herself close in front of Ylo covered by neutral shipping. Under the cover of night she was skilfully steered out of an almost desperate position by a coast fisherman (a Scotchman I believe), thus foiling the attempts which were made from the *Shah* with Whitehead and spar torpedoes to dispose of her in the darkness. Next day she surrendered to the Peruvian authorities. She had been hit sixty or seventy times, but was practically undamaged, and the dents and indentations in the *Huascar's* armour may be counted now. Neither the *Shah* nor the *Amethyst* were hit in the hull. Such is substantially the story told by the great American naval writer Mahan; and it was a useful story in its time, for it pointed a good many naval morals.

The war between Chile and Peru in 1879-81 arose out of disputes about nitrate fields in Bolivia. Peru supported Bolivia and Chile declared war. Peru possessed six serviceable ships of which the *Huascar* and *Independencia* were the best. The latter (3,500 tons) was an armoured broadside vessel with a heavy weight of guns. Chile possessed the *Almirante Cochrane* and the *Blanco Escalada*, ships of about 3,500 tons, fully armour belted, each of which carried six 9 inch 12 ton guns—all rifled muzzle loaders—besides lighter weapons. They were slow ships, capable perhaps of 9 knots. Besides these two were three wooden ships, the *O'Higgins*, the *Chacabuco*,

and the *Esmeralda*. The latter was very shaky about the boilers, and not good for more than 6 or 7 knots. And there was the *Magellanes*, gun-boat, 775 tons with one 115 pounder ; one 68 pounder ; and two 20 pounder guns, besides another gun-boat—the *Covadonga*. Chile was not relatively stronger, and Peru possessed the faster navy. Peru enjoys with Chile a length of coast and a maritime population from which to recruit the ranks of her sailors ; and never did a more gallant Captain tread the deck of any ship than Miguel Grau, who commanded the *Huascar*.

“ By a curious coincidence ” (says Markham), “ the Peruvian squadron started for the south, taking the President, General Prado, to Callao, which was the military field of action, on the same day that the Chilean fleet left for the north from Iquique for a general reconnaissance. Iquique was then under blockade by the Chileans, and the *Esmeralda* and *Covadonga* were left behind to sustain it. The two fleets missed each other, either on account of fog, or owing to the wide course followed by the Chileans in order to avoid observation, and General Prado as soon as he landed at Arica became aware of the two Chilean ships *Esmeralda* and *Covadonga* blockading Iquique far away from the rest of the Chilean fleet. He accordingly despatched the *Huascar* and the *Independencia* to settle accounts with them whilst he proceeded to take command of the Peruvian army.

On the 21st May the two ironclads were sighted from the *Esmeralda*, and Arturo Prat, who commanded that ship, recognised at once that he was in a tight place. But if Grau, who commanded the *Huascar*, was a brave and capable sailor, he had in Prat a foeman of his own breed well worthy of his steel, one who knew not the word “ surrender,” although under the unequal conditions of the fight he might well have made his terms with unblemished honour. He summoned to quarters the crew of his

old wooden craft and thus addressed them : " Boys," he said, " the Chilean flag has never yet been lowered. So long as I live it shall not be ! If I die, then my officers know very well what to do." At eight the *Huascar* fired the first shot. Prat manœuvred in close to the Peruvian town, imitating the *Huascar's* tactics when engaging the *Shah* years previously. And he managed to sustain the delusion that he was surrounded with mines, thus keeping the *Huascar* at a distance. But the Peruvians of Iquique opened fire upon him from a field battery on shore, and he was obliged to move out. Just at this critical juncture two of his boilers burst, and further manœuvring became impossible. Grau seized his opportunity and tried to ram. His fire had so far been as ineffective as was the same ship's fire against the *Shah*. Only one shot from the turret guns hit the *Esmeralda* in the course of the four hours' engagement, but this went clean through her sides and killed all the engineers, who were just leaving the engine-room. On the other hand, it is quite clear that the accuracy of the Chilean fire from the *Esmeralda* went far towards demoralising the crew of the *Huascar*, although it did no great amount of damage. At 10.30 the *Huascar* rammed and hit the bows of the *Esmeralda*. This was Prat's opportunity. Shouting to his men to follow, he leapt on to the *Huascar*—but the rapid rebound of the vessels left no time for his boarding party to follow. One man only (a sergeant of marines) went over the *Esmeralda's* bows with him, and these two took possession of what appeared to be the deserted decks of the *Huascar*. Grau from the turret called on Prat to surrender, but it was useless. Prat rushed aft and shot the only man he met (the signalling officer), and was himself shot down. Grau took tender care of his body, and with words of true and heartfelt sympathy he afterwards sent all Prat's effects to his relatives. The command of the now helpless

Esmeralda devolved on Luis Uribe, who (as Prat had said before the action) "knew what to do." He awaited the next impact of the *Huascar*, which caught the *Esmeralda* on her starboard bow at an angle of 45° . The water rushed in, the engine-room was filled, fires extinguished, magazine flooded, and the men who were serving it drowned where they stood. But before the *Huascar* could extricate herself Lieutenant Serrano, with a few men, again boarded her, and had there been a few more than there were, Captain Mahan thinks the ship would have been carried. But this seems very doubtful. They were all shot down from the turret and pilot tower—and Grau was in command. By this time the *Esmeralda* had only half her crew left. Water-logged, battered and smashed, with her doctor and all the wounded killed by the shell which burst in the engine-room, she was perfectly helpless and gradually settling down. But she would not surrender, so Grau had no alternative but to ram a third time, striking her full on the starboard side, and (according to Markham) discharging his guns into her at the same time. Then at last the gallant old ship disappeared from the surface of the Pacific, taking with her all that was left of officers and crew and with her flag flying to the last. Mahan says that 63 were saved: Markham makes it 50, but Captain Wilson, of the *Zenteno* (who was there), says 43. How far the continuance of the action was justified after Prat's death it is hard to say. It was a useless sacrifice of life but for the magnificent example of devotion to duty which it has left for future generations of Chilean sailors to contemplate. Prat is rightly the great naval hero of Chile, but the gods favoured him in that he died early in the action. It was not a great victory for the *Huascar*, and the lessons in naval warfare which it taught were old lessons, well learned already; but it was a typical fight, and it was part of the *Huascar's* record. It was some-

thing to me to tread the decks of a ship that had taken part in it.

The *Huascar* had then to turn her attention to her consort, the *Independencia*, which was stranded in a vain effort to follow the *Covadonga*, whose commander, Captain Condell (half-Scotch, half-Peruvian, of Chilean birth, and commanding a Chilean ship), had tempted her to her fate over a patch of foul and rocky ground, about 10 miles south of Iquique. The *Independencia* became a total wreck, and the *Covadonga* escaped from the *Huascar* after making a target of the stranded *Independencia*; and thus did an almost worthless old Chilean gunboat dispose of the best of the Peruvian ironclads and break the back of the Peruvian naval strength. This was fatal to the cause of Peru. For a time the brilliant performances of Capt. Grau with the *Huascar* staved off the inevitable end, due to the preponderance in strength of the Chilean fleet. He outmanœuvred the *Blanco Encalada*, and arrived on the 7th June in Callao Bay.

There would be little purpose in following the record of the *Huascar's* further exploits under the command of the Peruvian hero Grau, but that this grim old Chilean ironclad now rests in a Chilean port, and her records are interwoven with Chilean history. There is, after all, a bond of brotherhood between the Peruvian and the Chilean sailor. For four months Grau and the *Huascar* were a thorn in the side of Chile, harrying the coast, destroying shipping, and on one occasion (assisted by the *Union*) capturing a Chilean transport with a cavalry regiment on board. The stirring incidents of this four months' cruise would furnish material for a whole volume of romance. On the 27th August the *Huascar* engaged the two Chilean men of war *Magellanes* and *Abtao*, in the port of Antofagasta, but the shore batteries saved them, and the *Huascar* received a 300 lb.

shot through her funnel. She narrowly escaped destruction from one of her own torpedoes at the same time. A torpedo was directed against the *Abtao*, but it turned (owing to some defect in the machinery) on the *Huascar*, and the turret-ship was only saved by the gallantry of one of her officers (Diaz Canseco), who jumped overboard and deflected the torpedo from its course. It is related (by Markham) of Grau, that on this occasion he abstained from destroying the Chilean condensers on shore which supplied the town with water, whereby "he wou'd have compelled a force of 7,000 Chilean troops, encamped ready to invade his country, either to surrender or to perish miserably for want of water. Escape by land was quite impracticable, and there were no ships to convey them to any port." Chivalry such as this was worthy of his ancestry. He was a descendant of that race of Catalonian seamen who long lorded it in the Mediterranean. In his veins "flowed the same blood as gave life and vigour to the fleets of Aragon." But the end came in October when two ironclads and several other vessels were despatched from Valparaiso with a view of forcing the *Huascar* to fight against hopeless odds. Having ascertained at Arica that the *Huascar*, in company with the *Union*, was cruising southwards, the Chilean admiral sent his fastest ships (the *Cochrane*, *O'Higgins* and *Loa*) to cruise from 20 to 30 miles off the land whilst he himself with three slower vessels patrolled the coast between Mejillones Bay and Cobija. Early on the 8th of October, the *Huascar* and *Union* were cruising slowly northward from Antofagasta where they had been busy impeding the progress of military preparations for the invasion of Peru. "The weather was thick and foggy," says Markham, but another account makes it "fine and clear," when at 3.30 a.m. Grau sighted the smoke of the slow division on the northern horizon and imme-

diately put about to avoid action. Finding that he could easily outpace his pursuers he adopted a northerly course again at 5.40, but found himself at 7.15 (or thereabouts) in plain view of the outer or fast division of the Chilean squadron, which included the *Cochrane* and the *Loa*. The position of the *Huascar* was now extremely critical—escape was impossible—and Grau at once decided on a bold dash for his enemies with the intention of fighting his way through or perishing in the attempt. Hedging inshore as much as possible so as to make a less effective target for the enemy, he ordered the *Union* to part company and make her best efforts to escape. Her great speed enabled her to do this effectually, and she chased away northward; and Grau (now an admiral at 30 years of age) accepted the undivided responsibility of engaging the Chilean fleet. At 9.25 the first shot was fired from the *Huascar* at about 3,000 yards range and fell short—as did the next two. Then a ricochet struck the Chilean ironclad, piercing her armour and passing through the galley. So far the *Cochrane* had waited on the *Huascar*. She now closed up to 700 yards range and put in a broadside. A shot came through the *Huascar's* armour on the port side, entered the turret chamber, set the woodwork on fire, killed or wounded 12 men, and jammed the turret. At the same time a Palliser shot struck the *Cochrane*, but failed to pierce the 6 inch plating. The *Huascar* could now only work her guns through 130°, but the *Cochrane* was able to bring one gun into action at any angle, and from her tops she was able to clear the *Huascar's* decks and silence her Gatling. The two ships slowly drifted into close and yet closer contact, till a distance of from 100 to 300 yards only separated them as the action gradually developed. Then (according to Markham) Grau endeavoured to ram his adversary, his intentions being frustrated by the superior

mobility of the twin-screw battleship. According to Mahan the *Cochrane* kept a parallel course astern of the *Huascar*, until a 9 inch shell caught the conning tower of the *Huascar*, and Grau in it. It apparently entered by the one opening that existed, and exploded inside the tower. Of the gallant Grau nothing was ever found; Lieutenant Ferré was killed by the concussion; Lieutenant Rodriguez had his head taken off, and a shell entering the turret put one gun out of action and scattered "blood and brains about the roof." It was now the turn of the *Cochrane* to ram—but she missed, and put in a broadside instead. The steering gear of the *Huascar* was smashed, the turret jammed; the guns partly out of action and the ship drifting helpless, but still the fight was maintained till the *Blanco* came lumbering slowly up to assist her consort the *Cochrane*. At 10.45 the *Huascar*'s colours were shot away, but they were speedily nailed up again and the fight continued. Another shot struck the turret, killing Aguirré (who succeeded Grau in command) and horribly wounding Lieutenant Palacios. The fourth officer, Lieutenant Garreton, then took command and still maintained the action. Two crews had been smashed up in the turret, the trained gunners killed and scattered in mutilated fragments; yet a third crew went up to fight and kept the left gun working. Next (according to Wilson) a slight turn in the tide of action was given by the *Blanco* sending a stray shot through the stern of her consort, the *Cochrane*, which produced some confusion and gave Garreton a respite, during which he tried to sink his ship. But the *Blanco* put off boats and boarded; they stopped the engineer from letting in the water, with which the magazines were already flooded. "On the main deck the wardroom and stern cabin were quite destroyed. The contents of the state room were strewn about the flooring, and the upper deck ceiling was a mass of powder

and disintegrated human remains." The *Huascar* was hit twenty-seven times. Thus did she pass to the Chilean fleet.

Yet once again was the *Huascar* in action under the Chilean flag, on the 27th May, 1880, during the Chile-Peruvian war. This was at Arica, where she encountered the *Manco Capac*, an American built monitor, carrying two 500 pounders (spherical guns). The *Huascar* stood in to tempt the monitor out, and exchanged shots with the shore batteries and then retired for "breakfast" with no damage done. After breakfast she stood in again, and was struck by a ricochet which came up under the 40 pr. gun on the port side of her quarter and killed every man at the gun save one. That one was on the *Zenteno* during our voyage south. He was also in the *Esmeralda* during the memorable action with the *Huascar*. The *Huascar* again retired to repair damages, the monitor remaining at anchor. Again for a third time the *Huascar* went in, and the *Manco* moved northward from her anchorage. The *Huascar* tried to ram, going full speed ahead, but the telegraph connection with the engine room failed and her boilers suddenly gave out, stopping her way instantly. Just at that moment a spherical shot from a shore battery caught her on the poop, cutting Captain Thompson in two and killing two or three men. As Thompson fell his sword was driven into the deck where we saw it. The second in command then took the ship out of action.

And now she lies peacefully in Talcahuano dock—a silent monument to much brilliant seamanship and much magnificent bravery. Had Peruvian gunnery been equal to Peruvian seamanship and courage, the *Huascar* would have pointed moral lessons in naval tactics for generations to come. As it is, surely no ironclad afloat has such a record. No ironclad existing can have witnessed such scenes of heroism, such determina-

tion and "grit" in naval conflict! Her name is everlastingly linked with that of Prat and Grau, the two greatest naval heroes of the Western States of South America—two of the finest sailors the world has ever seen. Her past associations should be a link for ever between Chile and Peru. On the decks of the *Huascar* at least they should recognise their common heritage of glorious history.

The end of the *Blanco* was sudden. She fell a victim to the *Lynch*, gunboat, and was the first vessel destroyed by the Whitehead torpedo. This happened during the Chilean revolutionary war of 1891 in Caldera harbour, and Commander Don Luis Gomez (the cheery companion of our *Zenteno* experiences) was one of the few who emerged from the débris.

CHAPTER VIII.

SOUTHERN PATAGONIA : MAGELLANES TERRITORY.

I WAS a little surprised to learn from the naval authorities at Talcahuano that the forests of Southern Chile do not supply the greater part of the timber used in naval construction. These forests are so immense, the variety of timber contained in them is so great, the growth of it so splendid in height and girth, that it seemed almost incredible that the chief source of supply for the dockyards should be California. The explanation, no doubt, is to be found partly in the financial conditions which govern the trade. Timber can be obtained cheap anywhere on the Pacific coast, and probably cheaper from the north than from the south, where the forests are partially undeveloped and the timber trade is irregular. Partly, also, the fact is due to the peculiar adaptability of the Californian pine to purposes of naval construction. So much is this the case that without waiting for any general scheme for fresh conservancy, the introduction of the Oregon pine into Chilean forestry has already commenced. Plantations have been formed near Talcahuano. There is, nevertheless, quite a large variety of useful timber from the southern forest already in the wood market, and so much demand has already been made on the best and most useful classes of wood, that large areas near the coast (notably, near Puerto Montt) have been denuded of much magnificent timber without any attempt at replacing it by plantation, or hope of pre-

serving it by any system of conservancy. It was a reckless disregard of all the ordinary laws of forestry which permitted the destruction of the splendid growth of the alerce (*Fitzroya Patagonica*) near Puerto Montt. The ragged and weather-worn stumps which remain are witnesses to the splendid size of the trees and the ruthless nature of their destruction. There is not a good tree left. Fortunately, the best timber is at present found in positions most remote from the coast. Alerce and cypress are valuable wherever they are found, and it may happen that with the growth of the means of access to the upper valleys of the Andes, where they chiefly exist at present, will come a growth of appreciation of the necessity for forest reservations, and forest nurseries.

The southern forests of Chile should be a great source of wealth to the country, but the present policy with reference to them is very much like that of "killing the goose which lays the golden eggs." Amongst the useful timbers which deserve encouragement are the Bauli, a red wood; the Fresno (a kind of oak); the hard and durable Roble-pellin (good for sleepers); the Ciruelillo, which is a peculiarly grained and handsome wood and well fitted for furnishing; the Laurel (*laurelia aromatica*), and the many varieties of "Canéla," which furnish bark for tanning. These are their ordinary local names. The common trees of the south—the beeches (*Fagus Magellanica* and *Fagus Dombeyi*), so much more suggestive of the Scotch fir than of the beech as we know it in England; the Coihué, which is always associated with the beech in the Patagonian forests, and looks something like it; as well as all the many varieties of bamboo—all have their local value, though it is perhaps not a value which would repay the cost of exportation. In certain localities on both sides the Southern Andes there can be little doubt that forest conservancy would amply repay the cost of its maintenance. There are forests

about the great Lake Nahuel Huapi, for instance, which are being just as recklessly cut into as any about Puerto Montt.

From the harbour of Talcahuano it is a very short run by rail to the lovely old town of Concepcion. The Intendente, or Governor, of the town rightly judged that the best he could offer to the stranger was a view of Concepcion from the hills above ; so, after disposing of the inevitable reception (and the invariable but trying ordeal by champagne), we rode out of the quaint old plaza, across the poplar avenue (more stately and yet more blessed in the grace of its surroundings than the poplar avenue of Islamabad in Kashmir), and up the steep red slopes of the hills to where we might watch the Bio-Bio interlacing the plains (threaded with poplar and now blue with the shimmer of autumn haze), and curling itself lazily to the lip of the sea. It was a typical view of Central Chile. The town of Concepcion (square built, with straight streets intersecting) packed its white houses round the central Plaza, and extended broken arms out into the yellow plains beyond. On one side of it were the sunlit hills, red and purple, with dark blotches of broken forest ; and we stood on an outlying spur of them looking across the town and over the river to the shining sea. Below us was the Bio-Bio bridge, which is 1,889 metres in length and was opened in the year of grace 1889—so we were told. It wore an unsubstantial look because its girders rested on trestles with no apparent abutments, or protecting piers, to break the force of what is at times an unruly river. It looked just a narrow ribbon of communication between the town and the port of Talcahuano.

In every town of Chile the banks seem to occupy the best sites and to rise to the greatest architectural magnificence. So it is in Concepcion. But the shops are good, and the Club (with eighty English members) was

emphatic in its welcome and impressive in its hopes of a speedy termination to a condition of "armed peace" which handicapped trade and paralysed enterprise. From Concepcion we took an apparently irresponsible wayside train, and ran an unchecked course to Lota, where were the great copper smelting works. The train circled and twisted through streets full of poultry and children, sliding round the corners of houses, but avoiding actual collision (so far as we knew), till it struck almost into the copper works themselves.

Lota is the great centre of the coal and copper industry of Chile, and here enormous fortunes have been made. The copper smelting is accessory to the coal mining, for no copper from Chilean territory is smelted here. The ores (carbonates and sulphates) are brought down from California in ships, and here undergo a succession of refining processes. It is first smelted down to a 50 per cent. value; then calcined; then again smelted to a 97 per cent. value. It is finally refined to 99.9 per cent. value, and is then exported in the form of "pigs." Chilean copper, I believe, sets the world's standard for purity.

But memories of Lota are entwined with other visions than those of roaring furnaces and vast mountains of unutilised slag. There was a garden above Lota, on the cliffs overlooking the bay, which had been laid out by a Chilean lady, who, determined to redeem the black ugliness of the coal fields from which she derived her fortune by following the suggestions of artistic fancy, devoted the declining years of her life to landscape gardening. Nothing repays the artist in Chile like the development of its natural beauty in landscape form. For miles one might wander through the lovely leafy avenues of these gardens, turning occasionally into open spaces where fountains and statues broke the chequered lights, or where masses of flowers piled themselves in banks and

beds against the velvet slopes of cultured turf, and never lose sight altogether of the glitter of the western sea as it faded in hazy distance to meet the sunset, or deepened to intense shades of blue between the tree stems. The present owners seldom live in the old palace which overlooks the gardens of Lota. There the globe-cycler never reaches, and this garden of Pacific beauty, with its sweet touches of pure nature interlaced with the refined culture bred of artistic feeling; with its deep tangled gorges dipping down to the sea and its terraces and flats full of the loveliness of floral colour; spreads its sweetness over a busy town of furnaces and smoke, or lifts it to be wafted out over the grey Pacific waves.

By the dim light of a "bike" lantern we zigzagged down from the house of our most hospitable hosts to the shore edge, and put off for the *Zenteno* on the night of the 7th. On the 8th we were faced with the unusual conditions of a north-easterly wind and a dense fog, and the *Zenteno* proceeded cautiously on her way south. For two or three days the weather continued thick and hazy. Streaks of dark blue and grey to the east of us, with white woolly clouds, showed where the land lay. A few birds played about over the long gray waves, and an occasional dolphin's fin showed above them, but the sea was generally smooth; and thick rainy weather, with wind gradually veering to east and a falling barometer continued to be with us till we struck across the Gulf of Penas into the Messier Straits. This sort of weather was unexpected. As a rule, very rough seas with a strong wind, rising in the N.W. and veering round by W. to S.W., are the prevailing weather features at the fall of the year. The barometer is no indicator of weather changes in these southern latitudes. It appears to follow them rather than to indicate their advent. On the night of the 11th March we anchored off the

English narrows of the Messier Straits—to the north of them—and thereafter we only moved by daylight.

But for a short space where the peninsula of Taitao is anchored to the mainland by a half-submerged isthmus, in the midst of which is the glacier-fed lake San Rafael, there would be an open channel of communication navigable from Puerto Montt (which marks the southern land terminus of the great central Chilean valley) to Patagonia without touching the open sea at all. The very remarkable line of open straits which are represented by the channels of Moraleda and Messier, and continued with more or less irregularity to the Straits of Magellan, are the true geographical continuation of the central valley, and the islands lying west of them are probably (in the north of Patagonia, certainly) the geological extension of the coast Cordillera of Chile. In the gradual process of geographical evolution the land forms enclosing this line of straits which flank (as a deep ditch would flank) an equally remarkable line of volcanic action, have undergone most remarkable changes even in times which may well be called recent. In direct connection, no doubt, with the more recent episodes of volcanic action, they have been submerged, they have been raised, they have been tilted and twisted and transformed. It was near the head of the Gulf of Penas, and south of the San Rafael lake, that Dr. Hans Steffen (the distinguished explorer who represented Chile as expert with the Tribunal Commission) found forests so recently submerged as to render it necessary to be cautious in steering amongst the tree tops. And yet it is not far from here that modern sea shells and sea-water marks may be observed high up on cliffs now lifted far above sea level. The isthmus of San Rafael is probably sinking slowly, and future generations of mankind may find open sea replacing the glacial lake. It would be no great engineering feat to construct a passable

canal through the isthmus as it now exists were there any sufficient object for such a feat, but there is none. Meanwhile the Lago San Rafael is remarkable as the terminus of an enormous glacier, which scatters huge icebergs about its waters and may be regarded as holding the record for size and position (relatively to the equator) amongst glaciers of the world. Is there any other glacier descending to sea level in latitude 47° either N. or S. ?

The rapid desiccation of these regions, the folding up of great snow fields and the shrinking of the glaciers from the rocky walls which embrace them, is too obvious a phenomenon to be overlooked. The physical aspect of the Patagonia of to-day, so far as it concerns its mantling of ice and snow, is as different from the Patagonia of two or three centuries ago as it is from the continent of the South Pole. That great southern land buried beneath an ice-cap, which one may be entirely wrong in designating "eternal," is indeed (so far as we can ascertain from our present knowledge of the discoveries of the *Discovery*) in physical conformation of land and sea, of mountain fold and indenting inlet, but a reproduction of Patagonian structure, and exhibits all the visible phenomena of the Patagonia of five centuries (or even less) ago.

The straits of the Patagonian coast are far too narrow and intricate for a long ship like the cruiser *Zenteno* to risk navigating by night. It was only by daylight that we slowly steamed along the course between the hills, which sometimes narrowed to a stone's throw and sometimes receded from each other and left space enough for the westerly winds to raise a white-topped sea. Cold and grey and misty was the usual condition of the atmosphere, but neither greyness nor mist could much affect the weird beauty of the endless procession of the mountain scenery through which we glided and slid. The wisps of rain-cloud would gather up their skirts and



SMYTH'S CHANNEL, SOUTHERN STRAITS.

retreat up the mountain sides, and then finally would bunch themselves together in grey blocks, allowing the sunlight to streak the forest-covered hills. Forest was everywhere about us, dense, shadowy, dark, and generally dripping. The long lines of the higher sierra were thick with it up to the point where the granite cliffs, polished and smoothed by ice-cap and glacier, gave foothold to vegetation only on their flat ledges. The little islets, that seemed to chase one another through the streaky grey sea, were rounded and packed with it. They nestled down on the water with smooth curved backs broken by lines like the breaks in a fleece of wool, and the forest trees tipped over the edge now and then, blotting the yellow and white streaks of the shore line. Occasionally the surface of these enclosed seas was broken and rumpled by little white frills, but that was seldom. Generally the mirror of the flat water reflected mountains and cliffs and islands in vivid reversed reproduction, and it would be difficult to say where water ended and shore began, were it not for thin streaks of white which the scuttling water-fowl drew behind them.

Sometimes there would come a break in the hills. Then one looked up the long blue vista of a valley, counting fold upon fold and spur upon spur, ever growing bluer and fainter in the distance, till a gleam of white shimmering light showed where the glacier lay at the end. Sometimes another inlet twisted out of the main course, running so deep into the heart of the hills that the head of it was lost to view. But the glacier made itself felt in the cold touch of the icy air which breathed from its mouth, and in the countless little white icebergs that tumbled along one after another round the curves of the inlet shore out into the open. Although it was difficult to imagine that anything so wet and so dripping as that primæval forest could ever make an effective blaze, still

there were unmistakable evidences of vast forest fires at intervals. Square miles of hillside would be covered with the white interlacement of dead and fire-dried trees, and amongst them the young saplings of cypress and beech would stand stiff and straight, making a strong blue background for the white figuring of the skeletons. We were too close generally under the shadow of the hills to get much view of snow fields, but the great cones of the volcanoes, rounded and smooth with glistening glacial streaks about their waists, were nearly always sufficiently dominant to be well in view from the deck of the *Zenteno*, and, in spite of a prevalence of rain-showers and squalls, they usually asserted themselves towards evening, when the sky was blue in patches and the sun shot athwart the hill-tops.

Every evening as the great cruiser slowly came to anchor (about the time that the ceremony of lowering the Chilean flag to the sound of a trumpet took place) we would land on the shore edge and explore just so far as we could. That was never far. Along the immediate rim of the sea there were usually rocks and kelp and mussels and sea creatures of many sorts. Here we could climb along with difficulty; but the leaving of the hard rocks of the shore, and the thrusting of one's body into the close set jungle of undergrowth was a process much more difficult. The countless masses of growing things, and the rotten substratum of things that had done growing, made a most insecure footing. The deep spongy moss let one in knee deep even when it covered a hard rocky surface. When it merely hid a slimy mass of interlaced and rotten tree trunks there was no known depth to which one might not descend. It would be easy enough for a man to disappear bodily (as in an Irish bog) whilst still wandering under the shade of those forest trees. The result is that no living four-footed creature is to be found in Patagonian jungles near the

sea ; and sport, as known to the British sportsman, does not exist. But for rank, damp, green luxuriance they stand alone. None of this wild western archipelago of islands and inlets is of much material value. Thick as is the forest growth there is nothing on the islands which can be called good timber. A few "canoe" Indians find their home in these still waters, punting from one small bay to another, and subsisting on the mussels (choros) and sea eggs which cluster thick on the rocky edges of the land. Immense "middens," or mounds of cast-away shells, testify to a far more extensive Indian occupation than now exists, and all nautical wanderers through these by-ways of the sea speak of the rapid diminution of the ancient coast tribes. We saw some of them who came off on their shallow flat-bottomed canoes to do a little trade in skins with the cruiser's people. They were barely clothed (either men or women) and packed themselves into the canoe in family parties, with babies and dogs intermixed, huddling round the fire which sputtered and smoked on the canoe planks, just as they are depicted in some of the side illustrations of the earliest maps of Patagonia. They were interesting as the last specimens of a disappearing race of humanity, but they were not alluring. Squat in figure, immensely broad and muscular as regards chest development, with inefficient and short legs, long black hair (always worn in a fringe in front), broad, square but good-humoured faces, flattish noses, projecting lips and enormously wide mouths, they certainly appeared to me in all outward characteristics to belong to the Esquimaux type, and to be clearly allied to the Tehuelches, Onas and others of the land Indian tribes of South America. I am told, however, on excellent authority (that of Dr. Moreno, who has examined the many types of Indians with all the critical acumen of an anthropologist), that the Chonos, or canoe Indians, generally, are not to be

associated with the "horse" Indians of the mainland, or with those of Tierra del Fuego further south. To my untrained eye there is a most remarkable similarity in outward feature amongst them all, and not even the very marked divergences in the skull formation of different tribes entirely convinces me that they were not originally all of one stock. Their manners (like their costumes) were crude. They ate cigarettes as if they were biscuits, and evinced no shyness in demanding anything which took their fancy. There has no more graphic account been written of the habits and customs of these people than that of the Hon. John Byron, who lived amongst them for some months ere he made his way to Santiago in 1740. He saw the process of driving fish with dogs, which I believe is still practised by them, but we had no opportunity of witnessing this unique form of sport. Their canoes of beech planks are sewn together with twisted inner bark of the cypress and caulked with the outer bark of the same tree—excellently well made, and fitted with bilge keels. But their navigators never trust themselves to the open sea.

As we ran south the hills immediately enclosing the straits became lower, but more rounded and more glacier worn. White bosses of granite stood above the green strip of shore and occasional bands of quartz were visible. Deep inlets struck eastward into the heart of the mountain system which, broken and disintegrated, forms the central zone of the Patagonian region. On this mass of hills the snow is ever lying packed in fields, or consolidated into glaciers which partially hide the real configuration of the mountains. The perpetual snow line is hardly more than 4,000 feet above the sea level, and the everlasting drift of moisture from the Pacific, and its constant precipitation, keeps it lower on the west of the Andes than on the east, preserving it at abnormally low altitudes. Nevertheless evidences were not wanting that

throughout this region the snow is gradually but surely diminishing, the glaciers receding, and the line of perpetual snow rising. The low drifting clouds seldom allowed us to see much of the central snow line ; but there was just one occasion (on our return journey northwards) when the whole panorama of the southern mountains broke into a sunlit vision ; when the Pacific lay flat and calm behind



TEHUELCHÉ INDIANS.

us, and the clouds gathered themselves together for a space and trooped off to the east. Then the sun shone from a sky of an intense quality of blue, revealing the whole line of snow-draped volcanoes shaping themselves like gigantic sentinels and watching the little creeping ships on the surface of the sea beneath them. Such a sight is not often vouchsafed even to Pacific navigators.

At Hartwell Bay we changed our quarters from the *Zenteno* to the Chilean survey ship *Magellanes* (commanded by Captain Maldonado, a well-known authority on Chilean coast navigation), because the *Zenteno* was too long, and her draught was too deep, for the very narrow and shallow straits which lay between Hartwell Bay and the Ultima Esperanza inlet, where our examination of disputed territory was to commence. Two narrow sea passages connect Smyth's channel with the Ultima Esperanza inlet. The northerly one (White's Narrows) was not well known when we made our outward voyage. We became better acquainted with that remarkable sea gate later on. The Southern, or Kirke's, Narrows was quite well enough known, and much respected by Chilean navigators. Changing from the *Magellanes* to a much smaller vessel (the *Condor*) we negotiated Kirke's Narrows on the 14th March.

The circulation of the tides through all the narrow sea-ways which intersect the broken fragments of the southern part of the continent of South America is naturally productive of some very extraordinary phenomena here and there. The sea is piled on one side of a "narrows" (as the tide flows) to an extent that is often distinctly appreciable to the eye, and the rush through the rock-girt channel is enough to produce all the effects of rapids. The water churns and foams and swirls, and forms whirlpools and back eddies of extraordinary strength. It often takes the full power of the engines even to hold the ship against the current. Sometimes no headway at all can be made; sometimes the current takes the ship in its charge, drifting her through the straits on the top of a tide, turning her endways to her original course. All sorts of thrilling tales are told of the passage of Kirke's Narrows which block the sea highway between the Straits of Magellan and the now rising colonies of the Ultima Esperanza district, and seamen naturally regard

the passage as one only to be run under favourable conditions.

We had no difficulty. The *Condor* was small and light, but powerful withal, and we drove through on the top of the tide in water which was almost still. Then the straits opened out into a wide channel, the shores receded, and a wide expanse of green grey water, surrounded by broken snow-clad mountains, where streaks



THE BAGUALES RANGE.

and shafts of sunlight shot athwart the curling mists, lay before us to the entrance of the Ultima Esperanza Strait. Here were black-necked swans innumerable, who hardly troubled themselves to leave the ship's course clear; but it was true that they were moulting and could scarcely fly. When at last they roused themselves to exertion, it was to a flapping process of locomotion in which wings and legs were all applied with amazing rapidity of action and a vast amount of briny fuss.

Puerto Prat and Puerto Consuelo are the two embryo

ports of the Ultima Esperanza region. A pier, a store and a hotel are at Puerto Prat, which is the shipping station for the wool of the country, and from this little port (only a mile or so distant from Puerto Consuelo—a prettier but less approachable position) a straight road runs northward through the district to the foot of the Baguales range which shuts it off from the basins of the great lakes Viedma and Argentina, leaving but a few narrow slits in the hills for connexion. This road lay mostly in territory under dispute. Consequently it was not a government road. It was maintained by the sheep farmers of the district, who put their own strength and practical workmanship into the making of it, rendering it passable for their great wool carts hauled by big oxen of the Spanish breed, but somewhat intricate for lighter driving craft owing to the number of tree stumps with which it bristled. Nevertheless it was (and is) a most effective road, and a beautiful one. From the “beach” at Puerto Prat for 50 miles inland it would be difficult to find a road which runs through more splendid scenery even in the country which this region so much resembles—Scotland.

The most southerly Chilean port in the peninsula of South America is Sandy Point, or Punta Arenas. It is 3 degrees north of Cape Horn and about one and a half south of the Last Hope (or Ultima Esperanza) ports of Prat and Consuelo. An overland route of about 140 miles connects the two positions—a route which forms the usual means of postal communication, and which passes for the most part through low flat country intersected by marshes and forests and sometimes impassable on account of snow. Punta Arenas is the commercial key to all the Magellanes territory south of the Baguales mountains, and west of the line of continental water parting. It is the capital of the whole district, the trend of Magellanes trade being southwards and west-

wards, rather than eastwards across the continent to the Argentine port of Gallegos.

Punta Arenas is a rapidly increasing town with many good houses in it already, and a fine plaza flanked by the inevitable bank and the residence of the Governor of the district. The town stretches its length along the shore with little breadth to it. It is but a short walk across it to the hills rising beyond and north of it. The first house that ever was constructed in Punta Arenas is still to be seen—a wooden construction showing no signs of decay. Everything about Punta Arenas is new; and it has newly been made a port of call for ships of the British navy. Two or three lines of coasting steamers passing through the Straits of Magellan call there, so that it is a busy place and is rapidly growing busier. Its connexion with a fast developing interior ensures its becoming the chief commercial port of the south, and there can be little doubt that Punta Arenas has a future before it. But it labours under the disadvantage of being out of telegraphic touch with the Chilean capital. The Argentine Government, with an intelligent eye to business, have already established their own connexion, which, if not absolutely perfect at present, certainly will soon be so. Telegraphic communication between Punta Arenas and Santiago consequently passes through Buenos Aires. The Chilean Government are making determined efforts to solve the difficult problem of telegraphic communication by the west coast. It is a very difficult problem, but there will be a practical solution of it before many years have passed.

The greater part, if not all, of the wool trade of the Ultima Esperanza districts on the north passes, as I have said, through the little port of Prat to Punta Arenas, in spite of the difficulty of the sea route introduced by two such narrow gateways as Kirke's Narrows and White's

Narrows, one or other of which is bound to be negotiated by every ship passing to Puerto Prat from the Magellanes Straits. There seems to be no possibility of improving these passages, which will therefore always remain a permanent drawback to the usefulness of the Ultima Esperanza ports and keep them comparatively small.

The chief affliction of Punta Arenas is the prevalence of wind. Nothing can be made to grow without shelter, although, with shelter, almost anything can be made to grow. The wind register occasionally records 50 miles an hour for the strength of a passing gale, and occasionally the surface of the sea is driven up in such wild sheets of spray that the shipping in the roadstead (there is no harbour) is invisible from the shore. Wind is indeed the prevailing meteorological phenomenon of all South America, and it may be that the sweeping gales, which for nine or ten months in the year succeed each other at frequent intervals from the west, form the purifying and vivifying agent which makes that climate so splendidly healthy. In no country in the world must "weather" and "climate" be so differentiated as in Patagonia. The weather is bad as bad can be, wild and boisterous, bursting into fury, breaking into sunshine—freezing the blood in one's veins with a biting blizzard, or suffocating the system with the still steady glare of a noonday sun—and it may do all this and more in the course of a few hours' interval; but whether storming or shining, tearing one's tent to rags, or bathing the landscape in sunshine, who can describe the life-giving, purifying, sweetening, strengthening, gladdening effects of the climate? Natives of India talk of "eating" the air. They know nothing about it. It is only in Patagonia that one really eats the air. Small wonder that all little things grow large, and that Patagonia breeds giants.

It was in quite one of her sweetest and quietest moods

that Patagonia welcomed us about the middle of March, 1902, when we trekked away from the coast line at Ultima Esperanza and went northward to see the disputed land. Over the undulating, heaving plains, covered with a bush like blackthorn filling the air with the sweetness of its flowers, and with a thousand scents besides from the thousand flowering plants which lined the road; breaking down wild currant bushes and striking across the turf, scattering sheep into the bush as we went, we steered past the rounded hills under which lie the now historical caves (about which there is more to be said hereafter), and made straight for the forest which fits in between the spurs of the mountains due north of Puerto Prat. When the beech woods closed about us, it was necessary to drive warily, although it was but a light American spider buggy behind two most capable horses, and in the hands of a most experienced whip, that took me along. Other people had to ride. I owed a temporary relief from the saddle to the fact that one four-wheeled conveyance existed in this remote countryside, and there was one enterprising German gentleman, who knew every inch of the district and the exact height of every stump on the road, who courteously placed his trap and himself at my disposal. To Herr von Heinz I owe much more than mere friendly courtesy. He was full of information. He was one of the first colonists to plant the Chilean flag on the Ultima Esperanza shores, and the story of his early experiences was most instructive. In 1891 the "pioneer" attempt to explore this wild and most interesting region was made by Captain Eberhard—a sailor—from Gallegos. He reached the forests which enclosed the Dorotea range, but failed to get through them, and retired. Subsequently, he persuaded his cousin, von Heinz, to accompany him. They bought a steam launch, and after a romantic voyage they gradually worked their

way by soundings through Kirke's Narrows into the Ultima Esperanza inlet, landing at the point now known as Puerto Consuelo. Here in October, 1893, they commenced their explorations of the neighbouring hills, and ran up the Chilean flag. Meanwhile a colleague (Myers) from the eastern side had succeeded in rounding the Dorotea forests, and was bringing horses across the continent to meet them. Fires were lit on the hill-sides, and the smoke of answering fires was at last seen to the east. Gradually the signals approached, and at length the three intrepid travellers joined hands. Eberhard took up land near Puerto Consuelo in the full conviction that he was on Chilean territory. Von Heinz struck eastward to Dorotea and subsequently went northward to his present place, Palique. Here at Palique, ten years after, in the spring of 1903, I visited his flourishing farm which the King's Award had placed outside Chilean territory; and here, once again, he was the first to run up the Argentine flag on the border, even as ten years before he had been the first to fly the flag of Chile in those southern lands. Meanwhile he had amply proved the value of the country both for horse-breeding and sheep-farming; but it is well to remember that territory which has been in dispute between the two republics for 60 or 70 years was neither explored nor seen by civilised man ten years ago. Whilst still at Dorotea, before trekking farther north, the little party of German colonists were astonished by the first Scotch visitor from Gallegos. He had travelled through Australia and New Zealand and had established an estancia in the Buenos Aires province. Now he came south to see what there might be in Patagonia. His name was Tweedie.

In a snug little farm-house under the grey cliffs of Toro, where the forest reaches down from the summit and edges towards the shady slopes, and the huemul (the

one stag of Patagonia) makes his home in the braes, there lives Tweedie with two other Scottish gentlemen in contented contemplation of the sweetest prospect of rolling hill and grassy dale that ever was seen out of Scotland. Their garden slopes down to the edge of the storm-swept Lake of Toro—a lake which varies with all the infinite changes of nature's moods in this wild country, changing the silver, purple, and blue reflections of sky and hill, of forest and snow, to the dark indigo and greys of the storm cloud; fretting itself on the edges with foam, and streaked with the white lashes of the hurricane raging across it ice cold from the glaciers. Sunshine and rain, storm, squall and hurricane, follow each other in the quick succession of a north-country climate; but smiling or scowling, the air is full of the breath of life, the joyousness and freshness and the glorious sweetness of uncontaminated mountain atmosphere. Backward and northward from the farm the hills rise in gentle folds (where each little glade intersecting is a treasured store of grass) till they look downward towards the sunlit knolls which enclose Sarmiento—the lake without an outlet which lies under Painé. Sarmiento and Toro reach to the foot of the rugged snow-clad peaks of Painé and Balmaceda, and these mountains enclose the head of the sea inlet of Ultima Esperanza. Their savage precipices and castellated blocks are split by glaciers and wreathed with everlasting cloud drift. The savagery of nature's stormy moods is nowhere exhibited in a vaster, grander scale than here. Not even the concentrated outpour of the rushing Himalayan storm can match the unbroken and wild magnificence of a real Patagonian squall.

Sitting with Tweedie on the steep slopes from which the boulders slide down into Sarmiento, I watched the progress of one such squall. From out of the hollows and the mysterious ice caves of Painé it came, gathering

up its skirts of white twisted vapour from every little gully and indentation, spreading aloft on either side, as if for a gigantic skirt dance—black as thunder, with tossing white arms and slow steps, blotting out one by one the familiar landmarks, swallowing them whole, till Painé and its rugged foot hills had totally disappeared from view ; then, sliding and gliding its feet, whirling and waving its arms, it stirred up the little white frills and changed the colour of the lake from steel blue to green, and from green to black and white, until the whole flat sea hissed before it. It was wildly, magnificently grand ; but we also expected it to be wet, so we took to our saddles again and rode, splashing through the burns and racing over the grass, till we reached a point where we knew that the storm dance would end.

Eastwards from the farm the land stretches away in soft uplands gradually rolling to the horizon of the hills. Hills or plains, it is all grass land—and all good for sheep. Looking over the hills in a westering sun when the light is low and the almost level shafts turn the hillsides golden (only splashed with sober dark green where the scattered widths of beech forests intervene), one wonders what there may be on them to make sheep fat. For it is a noteworthy fact that sheep fatten in this country almost too quickly. The grass of the hillsides is the tufted grass of all South America, whether pampas or mountain country, and it appears coarse and stringy and wanting in nourishment. Nevertheless, it is a most efficient food for fattening, and it is on the hillsides and high up to the snow line that the sheep feed in summer, leaving the low-lying flat lands for winter pasturage. They become absolutely wild in these almost inaccessible retreats, and they are left to find their own shelter. When the puma (usually called “lion” in Patagonia) skulks about the forest tracts,

then sheep are occasionally lost by the score. The puma has a wicked habit of killing far more than he wants for dinner, and occasionally does incalculable damage. But he is vigorously hunted in the winter time, and he is certainly destined to disappear before very long.

So also with the Indians. When Eberhard and von Heinz ran their steam launch aground near Puerto



PEAKS OF THE SOUTHERN ANDES.

Consuelo and took to the land, they found Indians still in possession (this was just ten years ago), and the Indians promptly took possession of the launch. I believe it was never found again. But they gave themselves away by making use of some of the paint that they found in the launch, with the result that they were eventually tracked and punished by deportation elsewhere. This seems to have been the end of a very

small community. They are not to be seen in the Ultima Esperanza district now.

Where the hills of the district (which are broken and isolated, forming no definite range) south of the Baguales and east of the coast cordillera slope down to the banks of the Vizcachas river there is much valuable grass country (in April it is one vast hayfield), with a ragged and scattered growth of scrub at intervals.

Amongst the many beautiful valleys of the Patagonian Andes that of the Vizcachas clings closest to the memory. We saw more of it when demarcating the boundary, and setting the iron pillars into position between the Baguales and the southern extremity of the frontier in 1903, than during the preliminary visit for geographical reconnaissance in 1902. Under the cliffs of Cazador we pitched our camp on a long sweep of falling slope intersected by a mountain stream, and covered thick with lumpy round-backed low-growing masses of a thorny bush, which is found no further south than this. At the back of us was a small cañon running deep into the mountain where the broken grassy banks of the stream were sheltered by a decaying forest of the Patagonian beech, and it is curious that this tree is found no farther east than this. Before us the grassy levels of the valley in green and russet folds stretched away to the Baguales which lay their purple lengths along the northern horizon, broken into fantastic irregularity and crowned with silver peaks. At the foot of them a long low-backed hill denoted Paliqué, beneath which was von Heinz's farm, 20 miles away eastward. On the rising slopes to the far south, within the scattered bunches of forest, was the estancia of another Englishman. Two or three men from Somerset had their shanty on the river brink, and beyond them northward, hidden behind the foothills, was concealed the rock-bound valley where the "Baron" (another German settler) has planted

his homestead. To the west was black Toro, and Tweedie's. The river breaks up into spreading lagoons between Cazador and the Baguales, and is good for duck and snipe. In the month of March the grass is waist deep throughout the valley and bends and waves under the passing breeze like corn. The air is seldom still. Under the lee of the great hills at Tweedie's farm you may hear the wind rolling itself together in gusts high up on the crest, and preparing for a whirling, roaring rush down the slopes into the lake, or into the farm, as the case may be. The lake shows it in white spaces with spray blowing up like dust across the face of the water, and then spreading out and losing itself on the yellow slopes beyond. The farm shows it (when a small "whirlie" catches it on the corner) in broken windows and scattered gravel and heavy things (such as wool carts, for instance) transferred bodily to the lake.

The waving stretches of luxuriant green, in amongst which the winding Vizcachas river is hidden, are broken by a black scrub in patches which give cover to the ostriches which abound here. They much affect the company of sheep, finding that the companionship secures them from being hunted. They may be seen in long family strings sailing away over the plains and through the swamps in company with the racing sheep, which are almost as wild as themselves. Guanacos, too, stalk tamely about in the spring time, and will stand in groups keenly criticising the passing horseman. Nor are the present race of colonists at all desirous of the extinction of such harmless folk. Mutton is better than the flesh of guanaco any day, and of mutton there is no lack. At the back of our camp on Cazador, where the deep beech-filled gully wound into the hills, were many wild things. The shelves of the red and yellow cliffs that walled it were whitened with the

forsaken nests of the condor and eagle, and when the long flat slabs of rock were tilted at a sufficient angle, the caves and cracks below them showed signs of fox and puma, and a vast collection of small bones. Below the cliffs, the grass slopes broke in steep and lumpy steps down to the noisy stream. Here great black boulders were tricked out with many-coloured moss with the shining leaves of wet things clinging to them; a yellow calceolaria bunched itself in bright groups about the feet of the ragged beeches, and the white stars of a marguerite looked out from between their stems. The whole gully was full of life and of the music of the stream, typical of thousands of such gullies in the hidden corners of the hills—only a sample of the perfect beauty of nature's efforts in the far south of Patagonia.

All this country of Ultima Esperanza has been occupied by enterprising colonists, who have partitioned the land between them without waiting to know to which republic it might eventually belong. They have done great things in order to improve their holdings, and it was with especial reference to their locally recognised limits of occupation that the Award was made in those few parts of the line where no natural feature was available to furnish a practical boundary. Grassland does not end with the Vizcachas. It is found to the north of it in the sheltered valleys of the Baguales range, where (as I am informed by Sr. Bertrand) grass of an excellent quality spreads right up to the snow line. Nowhere north of the Baguales is there to be found a more promising extent of open grass lands suitable for sheep farming in the Andine region of the disputed tracts. In spite of severe and long winters, and of losses caused by snow, the wool industry thrives and increases in the Ultima Esperanza district. And when the sheep grow old and the quality of the wool degenerates, is there not the "graseria," where sheep are boiled down for fat and are

exported in this form in response to a lively demand from Chile? A boiled down sheep is worth about ten shillings. The breed of sheep which appear to do best here is the "Romney Marsh," with a merino cross to improve the wool. This is the same breed that answers best in Tierra del Fuego. Twice we visited this delightful country. The first time was in the Patagonian autumn of 1902; the second time was for the purpose of erecting pillars along the Awarded boundary about a year later. Both times our first rendezvous inland was Kark's farm, some 40 miles from the coast on the open grass uplands which lie under the hill called Solitario, beyond the forest and lakelet between the Sierra Dorotea and Castillo. One glorious day was spent in surmounting Solitario and looking over this promised land stretching from the Baguales to the sea, with its wonderful panorama of blue lake and yellow hill, and the mystery of cloudland beyond enveloping the crags and battlements of Balmaceda and Painé. The beech forest was even then reddening towards its edges, and holding out hopes of the glorious autumn colouring which was soon to paint the whole length of the Patagonian Andes in tints of scarlet and gold. At that time the Australian Kark and his young German wife were King and Queen of as glorious a territory as any successful sheep farmer could desire. There was the comfortable log-built farm, and beyond it the line of sheep kraals stretching away from a garden crammed with flowers; there, too, were the lazy Spanish oxen and the mob of horses awaiting orders, and the wool-press, and all the surroundings and etceteras of a thriving business centre. And they were all there (with the same unstinted hospitality) next time we came by. But Kark was no longer King. A lusty young person in all the thriving bloom of Patagonian babyhood had supplanted him.

It was with substantial feelings of regret that we

parted from our friends of the South to rejoin our naval colleagues for the examination of the harbours, and a look at the roads which had lately been hewn through the Patagonian coast forests from the Pacific to the valleys of the disputed area inland, when we left the Magellanes territory on our first voyage in 1902.



LAKE SAN MARTIN.

CHAPTER IX.

TIERRA DEL FUEGO.

ON the evening of January 11th, 1903, we were once again in the Southern Atlantic, bound southwards from the port of Rivadavia to Santa Cruz and Tierra del Fuego. With a clear moon, nearly full, and a small wind coming up from the S.E. (where a few black clouds streaked the sky), the cruiser *Nueve de Julio* of the Argentine navy (Captain Quiroga in command) heaved gently up and down to the long green Atlantic rollers, while the band played, and the ship's officers grouped themselves below the quarter-deck. Thick masses of kelp went floating by, indications that we were heading across shallow seas. The King's Award had been given, and the practical work of demarcation by the erection of landmarks on the boundary line was to commence. Only two officers of the Commission were with me then, Captain Crosthwait, R.E., and Lieutenant Holdich. The others (who had been with me on the previous year's reconnaissance) were already making their way across the continent to various sections of the as yet undemarcated line. The Argentine expert and adviser, explorer, and savant, Dr. Moreno, was also with the party on board the cruiser. There is so little about this long bleak Atlantic coast line regarding its evolution and conformation to be added to that which has already been said by Moreno and Darwin that I will leave the balance of the story of that eastern edge of Patagonia to the man who

has pre-eminently made Patagonia his study. Dr. Moreno has not finished his tale yet. And it must be confessed that this chapter which concerns the extreme south of the continent has little enough to do with the King's Award. There was no boundary to settle in Tierra del Fuego. Our work commenced east of the Ultima Esperanza inlet, itself connected with the Magellanes Straits by a very devious waterway; and the division of the lands south of those straits had already been effected. But there was time to spare. It takes much longer to reach Santiago from England than Buenos Aires, and the Chilean Commissioner and expert, Senor Alejandro Bertrand, could not be expected to reach the southern rendezvous for some little time after his arrival at the Chilean capital. So the Argentine Government, with their never-failing liberality, had placed at my disposal a gunboat (the *Patria*) to enable me to explore some of the most interesting of the ice-bound inlets and seas of the south, in addition to the cruiser which was to land us at the Ultima Esperanza rendezvous. To the music of a most excellent band the gallant cruiser waltzed gently over the waves, and she waltzed so well (even without the band) that by the morning of the 13th we were anchored in the Santa Cruz river.

The little scattered and zinc-roofed "poblacion" of Santa Cruz does not greatly impress the imagination at present, but it has made a brave beginning, and there is little doubt about its future. At present it wears an unfledged appearance; its streets lead to an open, a broad, and sandy glacis which slopes gently up to the plains on the south. But there is grass on those undulations, and sheep farming has been found to pay, and the squaring of farm allotments has begun; and the river affords a navigable way far towards the newly developing grass country about Lakes Viedma and Argentina—so that the tide of colonization has already well set in. The

tide of the river, however, with a rise and fall of forty feet and a nine-knot current, is somewhat against the navigation of the eight miles which exist between the



FERRY BOAT, RIVER SANTA CRUZ.

shoals at its mouth and the town. Nevertheless, ocean-going steamers find their way to Santa Cruz.

We did not make a long stay there. Coasting quickly southwards we were off Staten Island on the 16th. About six miles north of Staten is a small islet known

as New Year's Island. Here had been established a magnetic observatory by the Argentine Government for the purpose of working in connection with the South Polar expeditions—Norwegian and British. There was no difficulty in landing, but it was effected to a terrific accompaniment of roaring and bellowing on the part of a great herd of sea lions who swarmed over the rocky beach and in the sea, and thrust their great round heads above water so close to the boat as almost to appear aggressive. However, they only actively resented our interference when subjected to the arts of the photographer. They finally convinced Lieutenant Holdich that they were prepared to draw the line short of any very close acquaintance with his kodak.

In a scientifically constructed plank-built building, where cork has been introduced between plank walls in order to secure protection against great variations of temperature, we found the magnetic observation instruments. The equipment is very complete. Terrestrial magnetic variation is determined by three sets of instruments independently, as also is the variation in declination and dip of the needle; but there is no seismograph, which, in these days of careful earthquake registration, and at such an important centre, seemed to be a most desirable addition to the scientific equipment of the observatory. The effects of recent earthquakes are indicated to some extent in the variation line of the magnetic record, but not otherwise. All the wind gauges, thermometers, etc., were registered on an automatic system, and the same system (with photographic application) was adopted for one set of the declination observations.

The determination of the actual vertical force of magnetism was one of the scientific objects of the observatory. The net result of all these observations will be to eliminate the effect of magnetic storms from the observations taken by the Antarctic expeditions—at any rate

within the nearest quadrant of their field of action. A fairly even temperature of 60° F. was maintained in the observatory by careful attention to the heating apparatus, and nothing appeared to be omitted that could render the whole series of observations scientifically accurate. I was much struck with the method and completeness of the arrangements ; but I could not help



CROSSING THE SANTA CRUZ.

feeling some sympathy with the expressions of relief at the break effected in the dreary monotony of existence on this remote island by the casual visit of a few strangers such as ourselves. The island was thickly covered with low bush, and the white stars of flowers akin to the anemone brightened the sombre green, but there were no trees. Thick masses of kelp streamed out over the surface of the sea from the shores and indicated a wide fringe of rocky bottom.

Over a flat grey bubbly sea with yellow streaks of light aslant, we slid off to the entrance of Beagle Channel. The round-headed Monte Bello north of the entrance, deeply indented and snow-patched, sloped down to green shelves which were bordered by black forest, and long flattish shores ran westward therefrom. It was balanced by a similar dumpy snow-streaked peak looming on the port bow, under the cold grey sky. On the whole it was a desolate and dismal seascape which preceded the entrance to the mountain-girt and narrow channel of the Beagle. At evening we anchored off Harburton Bay. A red streaky sunset lit up the snow patches and turned the mountains scarlet, settling slowly into dull grey as the mists came creeping from the east and sneaked silently up the gullies of the mountain sides. The ship's deck grew damp, the flag came down to the music of the band, the quarter-master faded away below, and left the deck "to darkness and to me"—the centre of a small circle of gleaming sea amidst the deep shadows of silent hills.

Harburton by daylight is a most picturesque little bay surrounded by grass slopes, and it is the centre of a considerable industry in wool, which has been started by the Bridge family—three stalwart sons of a patriarchal missionary who first landed here some thirty years ago. In a pretty well-built little house set in the midst of a neat garden overlooking the bay, lives the mother of the family, a sweet Devonshire lady (now a widow), who must often think with pride of the great practical results which have followed the original mission; for the Onas (the most considerable by far of the rather inconsiderable tribes of *Tierra del Fuego*) have given in their allegiance to the family on sound practical terms. It would not be much exaggeration to say that the Bridges rule this country (so far as the Onas are concerned) with autocratic authority. They know the people, live with them,

talk their language freely, employ them on their now extensive sheep runs, and are recognised by them as the legitimate lords of the soil; the Onas of the south of Tierra del Fuego having migrated from the north in comparatively recent times when they found the Bridge family already in possession. This is almost the most practical form of mission work that I have ever seen.



NEAR HARBURTON, BEAGLE CHANNEL.

Steady, sober industry is the ruling principle of the settlement, and the only cloud on the horizon is the rapid decrease in the numbers of the tribe, with the increase of opportunities for giving them civilized employment.

It is well known that all these southern Indians are rapidly decreasing in numbers, and it is some satisfaction to realize that, badly as they have sometimes been treated

by the worst form of European settlers (traders and miners), their decrease is entirely due, in these days, to natural causes. Mrs. Bridge told me that measles was the primary cause of their disappearance. This, combined with occasional epidemics of small-pox, and the universal prevalence of pulmonary diseases is thinning them out rapidly. Even special means taken to preserve children by the establishment of an orphanage and the introduction of skilled nursing proved useless to stay mortality, and the attempt was abandoned. These Indians are not altogether wanting in intelligence, and they possess certain physical and moral qualities which it is possible to admire. They are gifted with such extraordinary capacity for endurance, for instance, that they can actually run down wild cattle afoot ; and when they meet for their savage periodical bouts of wrestling, and paint themselves red and nearly kill each other, they play the game with a chivalrous regard to strict fairness which raises them well above the level of barbarism. But heredity is too much for them. They are wild savages of the forests at bottom. Their superstitions are so interwoven with the mysteries of nature, and withal are of such a childish and unreasonably foolish character, that they are not worth a reference. Onas, Yahgans, or Alakalufs—they are all alike in their primæval character of wild half-reclaimed children of the woods. Civilization has come upon them ere their development was equal to it. They were not advanced enough in the scale of humanity to assimilate it, and just as the Indians of Misiones abandoned their Jesuit teaching and went back to nakedness and barbarism a century ago ; and as the *protégés* of Admiral Fitzroy cast off their stockings and patent boots, and lapsed straight into the depths of aboriginal sin at the earliest opportunity in later times, so would any of these interesting and picturesque savages lapse, were the practical advantages

gained by civilized living and labour removed from before them. They are not ill-natured, and they are teachable



PATAGONIAN INDIANS.

and make good servants, but these after all are only animal qualities ; they are the last remnants of a world's race that in fulness of time must inevitably give place to

others higher in the scale of human intelligence, unless indeed the great process of national development is to go backwards. Only anthropologists need regret the ordering of the world's progress which ordains their disappearance, and anthropologists must make their studies quickly, for some of the tribal sections are already reduced to tens. The Onas number from 300 to 400 (with two distinct tribal sections and language), the Yaghans muster only 120. Head measurements place them half-way between the long-headed and round-headed sections of humanity. The depth of skull never varies (even with their height), but the breadth varies considerably.

Steady rain interfered with a project for guanaco hunting in the interior and prevented further view of the configuration of the mountains, so that I am indebted to one of the Bridges for such slight information as I could obtain of the swamps and forests of the island. There is evidently a fair opportunity for still further developments in sheep-farming beyond those which are so well advanced in the south and on the Rio Grande. Good camp (grazing land) exists at intervals, but no forest growth of any material value. Romney marsh sheep are found to thrive best in this country, and they do well; but they are as wild as deer and very difficult to approach in some of the more isolated runs. The wool is all pressed on the farm holdings and the labour is entirely Indian.

The 19th January found us at the new Argentine settlement of Ushuaia. It is practically a convict settlement designed to take the place of Staten Island, but it may rise to some commercial importance in spite of want of communication with the interior.

The saw-mills were doing a good business in the half-cleared space of a hill side, which was full of charred stumps and white tree skeletons, and there are one or two good stores at Ushuaia. We dined with the hos-

pitable governor and his English wife, and were duly impressed with the magnificence of his ex-convict retinue. Our humble efforts at full dress were as nothing to those



MISSION HOUSE, FARTHEST SOUTH.

of the gorgeous creatures (male and female) who waited on us. I fear we made but little impression.

Early next morning we left in the gunboat *Patria* (Captain Zurueta) for the south. It was lovely after the rain. The clouds were all laced up the mountain sides,

leaving long snow patches and slopes of beech above the yellow foreshore and the half-built town with its grass-grown streets. Shaping a course southward past the rounded granite knolls and pine clumps of Ponsonby Sound, we ran into Tekanika Bay to visit Mr. Williams, who conducts the extremest south of the South American missions. It is a sweet little bay in summer, bordered by smooth grass slopes crowned with beech woods and backed by granite hills ; but the mission station lies for so long under snow that the soil is always soft and spongy, and the damp must be awful. Here are from 70 to 80 Yahgan Indians, living partly in wigwams and partly in small wooden huts. The mission house and church are both neat, tin-roofed, wood-sided buildings. Certainly the happy-looking red-cheeked family of Mr. Williams himself testified to the general salubrity of this southern climate, and if all the year were summer, Tekanika would be a perpetual joy. But there must be terrible spells of wild winter weather, and long weeks of weary waiting for news of the outside world, and many hours of darkness and cold to cast the spell of depression over the little mission world—such darkness as sailors feel who spend their winters in Arctic ice. The few Yahgan Indians who spread themselves idly about the premises did not impress me as offering a very promising field for missionary labour. They would have looked better on Bridge's sheep farm—and they were very few. I could hardly help recalling to mind the millions of far more intelligent people in India who have probably never seen a missionary ; to whom the great Sirkar (the Government of India) is but a magnificent abstraction in the far-off background of their existence ; who are still waiting to hear something of the ethical principles which govern those who govern them.

We anchored that night in Orange Bay with the remnants of the French expedition to observe the last transit

of Venus still hatching a small hillock in front of us. A jagged headland cracked into blocks by Arctic frost, a black and white basaltic formation with lime encrustations, ran out southwards. Sap green trees with stiff white stems fitted nearly into the clefts and made smooth ramps with their green tops up the cliff sides.

Starting in the small hours of the next morning we faced a strong south-west wind and a thick mist, and the little gunboat rolled heavily, so we ran into a cove near False Horn and waited. Not long, however, for it suddenly cleared, and our enterprising commander at once struck out for rounding the Horn. In this cove (Orange Bay) we found coral formations beneath masses of kelp, and on the shore edge and above it, amidst rushes, lichens, robé bush and laurel, were many beautiful flowers—pink sea daisies, anemonies and marguerites. Vegetation was very abundant and much varied.

Over the long Pacific swell, with a gentle swaying roll, we passed round the much-dreaded Horn that day as if the weather had purposely modified to meet our wishes. Cape Horn is a majestic land's end—worthy of its position. Rearing up its rugged pinnacles to 1,400 feet, with broken weather-seamed front and blackened scars (as if the sea artillery of all ages had battered it), with long sober dark green ribbons of stiff vegetation winding aloft, without a bird or a tree to break the rigid lines of its grey granite columns, it fronts the southern ocean in grim majestic strength. It seemed to overshadow the little gunboat crawling around its feet, looking over us to the great, ice-bound, white silences of the Antarctic. We went northward then, and after paying a passing visit to Sloggett Bay and wading through rotting kelp along the foreshore to the gold miners' camp (where we found much evidence of former industry, but not much promise of future wealth), we again turned west into the Beagle Channel and came to anchor off Picton Island.

We landed at the historical spot where the stone still stands which witnessed to the tragic fate of the Alan Gardiner mission. It is an old story now, but the stone still preserves the pathetic request "Dig below." It was here that a passing schooner found the record of the starving missionary and his companions, and directions where to search for them on a neighbouring island. They found them, but (as all the world knows) they found them dead. The island, now called Gardiner Island, is serenely beautiful. The shores are bordered by a thick fringe of kelp in which gulls and oyster catchers flap and feed, and the rocky coast-line is broken by shelving coves where every beach is marked by the ancient middens of Indian settlements. The grassy slopes of the mountains are patched with forest and bright with flowers; only the twisted and distorted stems of the trees to the N.W. witnessing to the prevalent direction of the wind and the force of it. Crowds of gulls and flocks of black and white "abutada" (geese) pervade the waters where the kelp throws out its streamers, and the weird "steamer" ducks flap their way across the water in spasms of futile fuss and flurry, leaving trailing white lines behind them. It was very beautiful and very peaceful.

Tierra del Fuego is, however, but a comparatively small branch of the immensely wide field of South American missions; which stretch out a hand to help in far more promising (if not so picturesque) fields of labour than these of the extreme south.

We heard of them again in Buenos Aires—that great and growing city of the west, with its constant ebb and flow of a restless population. In the crowded suburbs of that great town are to be found many small unreclaimed waifs and strays of humanity, in spite of the 507 schools that there existed in 1902 with an attendance of over 88,000 children, who offer to the

missions an opportunity for useful help with a practical purpose; for here is the opportunity for good service to the State, the chance of fashioning a solid benefit to the country at large out of waste (if not deleterious) material, such as is not to be overlooked. And the help is not withheld. The schools conducted by Mr. W. Morris (much on the principle of the Barnardo Homes) are supported by the



GLACIER, ROMANCHE BAY.

missions, and these schools are already commencing to scatter well-educated and honest work-people (of both sexes) through the length and breadth of Argentina. It is impossible to over-estimate the value of such institutions as these. The advantages to the State are obvious, and if the advantages of Indian redemption to the State are not so obvious, we must remember that it is not only the State which has to be served. Surely no mission labour is lost in the long run.

We visited Ushuaia once more, and after picking up our washing, we next headed westward for Punta Arenas, whither the *Nueve de Julio* had preceded us. Tree-covered islets were all about, rank with green bush. White-starred undergrowth fringed the curling and twisted quartzite and schistose rocks which faced the sea with staring yellow and white bands. Passing French Peak to Point Divide, we took the N.W. passage of the Beagle Channel, and ran between glacier-streaked mountains to Romanche Bay. The glaciers were magnificent, tinted light blue in the hollows and edged with light brown where the rocks dipped to them. Deep blue streaks marked the fissures which scarred them. Some of these glaciers were moulded into forms like a tumbled sea when two strong currents meet; others sneaked softly down to the sea edge under a soft snow covering, and dropped icebergs into the water, or spread into terminal fans with beautiful lines of radiation. The air was still and almost balmy above the deep dark green waters of the bay.

The morning of the 24th broke cold and rainy. We steamed out of the cove and passed a magnificent glacier with a double waterfall in two heavy streams, pushing a central arm of ice into the sea which broke up into icebergs. Its pale blue surface was tumbled and broken, and interlaced with the deep blue lines of innumerable cracks and fissures. After another half-hour's run we struck another great glacier, presenting a broad and deep front with a morainic delta extending from it to the sea. We landed here with some difficulty, and visited the glacier. Making our way along a torrent bed and over flats covered with grass and flowers, we reached its foot, and explored a deep glacial cave where marvellous effects of light and colour were transmitted through translucent arches. The ice wall at the glacier foot stood from 50 to 80 feet high, and the *débris* which

covered it consisted of sharp-edged boulders of granite, pure hornblend, schist and quartzites, all of which must have fallen from the peaks above. The morainic formations at its foot, and the scarred edges of the enclosing slopes, showed it to be retreating and diminishing, but not so rapidly as was observable elsewhere. Vegetation of some years' growth crowded closely up to the edge of the ice. Flowers and wild fruit (the "muerta") massed themselves in the small clear spaces of the delta in extraordinary quantities, patching it with all the vigorous colour of a bright Persian carpet. Throughout that day (after our return to the gunboat) we passed nothing but a series of ice-caps, glaciers, and snow fields, crowning the northern mountain ridges of the N.W. channel. We anchored in a small bay indenting O'Brien Island. Next morning we started westward, in the teeth of a howling N.W. gale, for the Brecknock Pass and the route northward round the outer islands facing the Pacific. No words can describe the bleak misery, the windy desolation, of those windward islands. Here and there they possess the rugged and almost repulsive barrenness of the Red Sea volcanic islets, but they are of the same rock construction as the more sheltered islands further east, where grassy glades and beech woods run down to the sea edge. Here they have been literally scraped bare by the Pacific winds. Their rounded grey granite knobs present a clean bald surface to the ocean. Only in the clefts does the Patagonian beech hold on; and it is almost pathetic to note the struggle for existence which the trees sustain, hiding in cracks, or supporting each other in miserable clumps, with bowed heads, and long white attenuated stems reaching out like tentacles to find something of a root-hold in the chinks of the granite staircases. We had a rough-and-tumble time of it for some hours, and then made good shelter again to the east of Clarence Islands,

after passing under the shadow of Mount Sarmiento. Sarmiento is proverbially difficult to see, from the constant clouds that gather round its summit even on an otherwise cloudless day. The weather now was anything but cloudless; stiff north-westerly gales set in in steady succession (although we were still in summer days) and occasionally imitated the violence of a hurricane. Nevertheless, I had the luck to secure a sketch of Sarmiento to the very summit. Its isolated position and the magnificent glaciers facing the length of Cockburn Channel westward have given Sarmiento a reputation for impressiveness which personal acquaintance with it hardly supported. It is not to be compared to some of the peaks about the head of Ultima Esperanza—Balmaceda, or Painé, for instance. On the 26th January we passed through Gabriel Channel (the "channel of 1,000 waterfalls"), a fitting termination to a voyage which had been so replete with the interest of ice-bound mountain solitudes. There was an ice-cap extending for mile after mile along the crest of the enclosing mountain ridges on the south, and from it there poured down an endless succession of milk-white cascades, spouting and frothing through hundreds of feet to the rocky sea edge below. The number of them was almost past counting. The enclosing hills at the "narrows" grip the waters of the channel so closely as to produce a strong current and a broken sea, and the little gunboat *Patria*, crawling slowly along the bottom of this mighty ditch, found it most difficult to maintain her headway. On the following day we paid a passing visit to the Roman Catholic mission at San Rafael, which is conducted by three *padrés* and three sisters. The mission includes about 100 Indians (mostly Onas, but there are a few Alakalufs), and wears all the appearance of a flourishing and self-supporting settlement. The mission houses are extensive, well built, and beautifully well kept, and the looms and saw

mills were in steady operation. I saw a large number of Ona women ; the workroom weaving material for their own clothes. I wondered what they were all thinking about, or whether they ever thought at all ! Was the daily routine of a busy life inside the walls of a well-filled room, with all the saving grace of the mission teaching, a welcome equivalent for the wild wide spaces of their chequered hills and forests, and the unlimited freedom of a life which oscillated between starvation and repletion ? Total lack of imagination, with a half-developed intellect and the daily satisfaction of sufficient food, may of course assist to reconcile the forest-bred savage to the dull monotony of weaving petticoats, just as it reconciles a tiger to its cage ; and these last remnants of a prehistoric race that has known nothing but the freedom of the natural life of the jungles through all the ages, may gradually fade out of the world, victims to pneumonia and measles and civilized complaints, contentedly weaving clothes and sawing planks to the last ; but remember Misiones and the Jesuit missions ! If there were not so few of them I should fear a sudden reversion to aboriginal barbarism.

We bade adieu to Captain Zurueta and his gallant little ship with regret when our holiday came to an end. We changed over again into the wider accommodation of the *Nueve de Julio* for the last run into the Chilean port of Punta Arenas, where we should find the new Chilean cruiser *Chacabuco* (commanded by our old friend, Captain Don Luis Gomez) ready to convey us to boundary business on the shores of the Ultima Esperanza inlet in Magellanes territory.

From Punta Arenas to Hartwell Bay was but a short run for the *Chacabuco*, and there we found two vessels, the *Huemul* (twin of the last year's *Condor*) and the *Pinto*, awaiting us ; for the *Chacabuco* was too long a ship to be navigated safely through Kirke's Narrows, and the

Hucmul was there to effect the passage which the *Condor* had made before. The *Pinto* was on duty for surveying purposes, and it was in the *Pinto* subsequently that we negotiated the other water gate to Ultima Esperanza, *i.e.*, White's Narrows.

We had visited the Ultima Esperanza inlet and had reconnoitred northward from the little ports of Consuelo and Prat on its coast during our previous voyage of 1902, but on that occasion we had gone no farther south, so that we saw Punta Arenas for the first time in 1903. The previous journey in 1902 had been too rapid to admit of leisure for visiting many interesting spots which would otherwise have attracted our attention. Now, with a day still in hand after making all camp arrangements with the Chilean expert and commissioner (Sénor Bertrand), who joined us in Hartwell Bay (Dr. Moreno had left us at Punta Arenas and returned to Buenos Aires), we devoted a few hours to a visit to the caves near Puerto Consuelo, which had been made famous by Moreno's discovery of the remains of an extinct fauna of the ground-sloth species, co-existent with man. The great cave, which seems to have been the old-world rendezvous for many species of extinct (as well as of existing) animals that once roamed through these Southern Patagonian forests, is a gigantic hollow in the strata of the cretaceous hills lying northward some six or seven miles from Puerto Prat. A lovely morning's ride through the blackthorn bush (now in full flower), with scented air around and a dappled sky above, brought us to the mouth of the cave, where a small but apparently thriving business in the sale of prehistoric remains has already been established by an enterprising loafer. The cave is of enormous extent and presents the appearance of an old graveyard, so pitted is it with excavations in search of palæontological curiosities. The light-brown powdery earth which lies thick on the surface has appa-

rently fallen chiefly from the roof. It is intensely dry and friable. The *débris* of excavation was scattered about in great disorder, and the process of digging appeared to me to be far from systematic. Bunches of red mylodon hair were mingled with old bones and other disjointed fragments, and we actually found a modern bird's nest, which had fallen from the roof, made of nothing but the hair of an extinct sloth. Here, it will be remembered, the first evidences of the existence of the *grypotherium* (*Listai*) was brought to light, and closer examination revealed the fact that the cave must once have served the purpose of an ancient Corral, where these huge ground-sloths were kept, fed, and killed by man. Remains of the same Pampean Mammalia had been found in the Buenos Aires Province, and near the Patagonian coast in the pleistocene deposits of the Bay of San Julian, and at Santa Cruz, pointing (according to Moreno) to the former existence of a continent to the east of the present Patagonia from which these animals migrated, crossing westwards to the Cordillera in the intermediate periods between the two great ice extensions. Those eminent scientists, Hauthal and Roth, of the La Plata Museum (who have done more than any to elucidate the mysteries enfolded in this cave), found there the remains of a jaguar as large as the tiger, a species of bear, and the Pampean horse—all belonging to an extinct fauna of the northern Pampean regions.

“So then,” says Moreno,* “the territory of the Patagonian plateau is connected with the problem of the Southern Continent which, to so great an extent, has disappeared. The discovery in its geological caps of vertebrates closely allied to others found in South Africa and Australia; the large fossilized tortoises of the province of Buenos Aires, analogous to those found in the islands of the Indian Ocean and in Galapagos; the discovery of dico-

* *R. G. S. Journal*, September, 1899.

tyledoneus plants in the Andean cretaceous formations, among others, apparently, the remains of the eucalyptus—are all in favour of those who maintain the existence of these lands and their disappearance in recent times.”

The solution of this problem adds enormously to the interest attracting itself to the geological investigations of the *Discovery* expedition, which may teach us yet more of that primæval condition of southern continental geography of which Patagonia seems to be a modern sample.

The chief point of interest on our return journey from demarcation duties in the Ultima Esperanza district to Valdivia and Santiago was the navigation of White's Narrows, on a grey day of storm and shadow. The entrance to these narrows from the east is hidden amidst a small archipelago of islets, tree-covered and fringed with flowers, through which the *Pinto* steered for the rock gateway of the narrows. The entrance is straight, an advantage which this passage possesses over that of Kirke, but the actual gateway is narrower, and the tide pours through it with a terrific current. We went slowly through, with the crew at quarters and the boats ready for action (the *Pinto* being rather a large vessel for so narrow a channel); but a few moments' expectation; when the tide appeared about to swing the ship round, afforded all the excitement incident to the passage, and there is evidently little risk to be incurred with skilful navigation. But both these narrow sea-ways are difficult, and they will undoubtedly discount to a certain extent the value of the Ultima Esperanza ports.

The trade outlet for these minor ports is Punta Arenas in the Straits of Magellan, but the wool collected from the farms of the Maravilla Lake basin beyond the head of the Ultima Esperanza inlet is by no means dependent on sea freight for transport to Punta Arenas.

The road connecting the ports of Prat and Consuelo

with the Straits is a long one (170 to 180 miles) and it is a low one, skirting lake edges and crossing small feeders, and occasionally impassable from floods and winter snow. The sea passage is incomparably cheaper, quicker and more certain ; and it may be noted with respect to the prospects of development generally in the Southern Andine region that the shortest route to the coast will probably pay best in the end for all produce. The chief difficulty is to find suitable ports and anchorage.



USHUAIA, BEAGLE CHANNEL.

CHAPTER X.

PACIFIC COAST AND ROUTE THEREFROM.

THE Ultima Esperanza district forms a square block of the disputed territory in the extreme south. Its communication with the outside world is mainly through seaports, and its commercial affinities are Chilean rather than Argentine. To the north of it for 120 miles beyond the Baguales range (its northern limit) lies a space of Argentine territory—the great depression of Lakes Argentina and Viedma, draining by the Santa Cruz river to the Atlantic. Northward beyond this depression again, for nearly 500 miles, the disputed Andine region stretches through vast primæval forests and broken mountain country to a point where another great depression, containing Lakes Fontana and Plata, divides it transversely, these two lakes belonging to the Atlantic system of hydrography. This 500 miles of Patagonian Andes is again divided by the gigantic Lake Buenos Aires which, extending in a curve east and west, abuts its western arms and inlets on a mighty mass of snow-covered mountains dominated by the St. Valentin peak, and spreads eastwards gently to the extreme eastern foot hills and moraines edging the Argentine pampas. The main outlet of the Buenos Aires Lake is southward and westward, through the enclosing mountains, by a tortuous river known as the Baker (in the Chilean maps), which connects it with the Calen (or Baker) inlet of the Pacific coast. But

the basin of this great lake is irregular. The Rio Fenix which supplies the lake from the north has hardly yet parted with its ancient Atlantic connection, and now divides eastwards and westwards; so that there is at this point a water-line dividing the continent, a feature which may, indeed, be found elsewhere in Patagonia.

Obviously the material commercial value of the whole of this region depends largely on its means of communication with commercial ports or centres. The Argentine depression containing Viedma and its sister lake is connected by road and river with the port of Santa Cruz (now rapidly rising into significance), some 250 miles distant on the Atlantic coast. Already the huts of settlers are beginning to spring up about the grass lands to the east of these lakes, and are dotting the unoccupied spaces that border the river near its mouth. Westward of the lakes no explorer has yet been able to say what may be the real conformation of that gigantic mass of ice-bound mountains which parts them from the arms and inlets of the Messier Straits. A grander array of glaciers than those which gleam above the western shores of Argentina and Viedma, edging them with ice cliffs and filling them with icebergs, it is impossible to conceive. Without being difficult to approach they are impossible to pass. It seems more than probable that there is one unbroken ice causeway (situated just a little north of Mount Fitzroy and to the south-west of Lake San Martin) which connects the upper valleys of Viedma with the Pacific outlets. If so, the boundary line between the two States crosses a glacier at this point.

In order to reach the 500 miles of Andine districts now divided between the two republics to the north of the Viedma-Argentina depression, we have a choice of ways which can only be regarded as a choice of

difficulties. The Calen inlet at the south-east corner of the Gulf of Penas strikes eastward, piercing the mountain masses of the Western Cordillera, and radiating its arms and fingers so as to catch the drainage of the whole mountain system from Lake Buenos Aires to Lake San Martin. There is, stretching from one lake to the other, a series of enormously high and rugged sierras (which now carry the boundary), crossing the general lines of drainage, and this series parts the mountain country into two long narrow meridional divisions. The natural line of approach to the western half is the Calen and its affluents. The natural line of approach to the eastern half is by the open plains and the rivers intersecting the pampas of Argentina. Both are difficult. The Argentine from its length, its undeveloped wildness, its morasses, and its mud; the Baker from the physical obstacles that encompass it—swamps and forests, narrow gorges and cañyons, bamboo jungle and the pest of mosquitoes. Between Lake Buenos Aires and the Lakes Fontana and La Plata one great river system (that of the Aysen) with four radiating branches, spreading north and south and east, drains the whole area, and gives a precarious right of way through the Western Cordillera and its swamp-ridden humid forests, to the higher grazing lands of the eastern spurs. This is now an established Pacific connection, shorter and more accessible (so long as it is open) than the weary road which stretches across the continent, following the line of the lower Senguerr and ending at the port of Rivadavia on the Atlantic coast; and it is doubtless capable of further development.

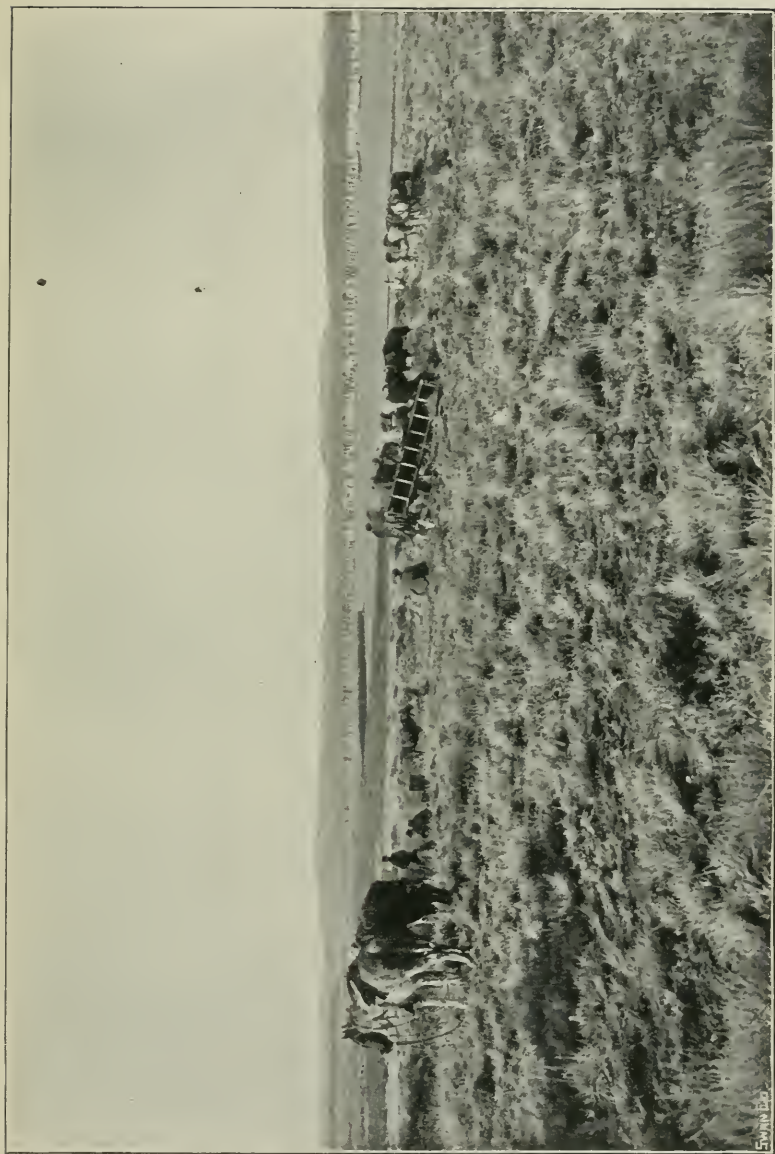
Linked (geographically) with the Aysen valleys to the north of the La Plata-Fontana system (but cut off from them by intervening mountains) is the valley of the Frias (or Cisnes), and above that again is the Pico basin, between the Frias and Lake Paz. Both these

great trans-Andine depressions drain directly to the Pacific, the Frias possessing a fair spread of good grass lands about its head. Nearly the whole basin of the Aysen, and all that of the Frias, and half that of the Pico, have become Chilean property by virtue of the Award, and the commercial outlet of all these will be by ports on the Pacific coast. It may happen that a practicable pass will be found which will ensure a connection between Frias and the northern valleys of the Aysen, passing through Chilean territory—but none is known at present. The simplest and shortest road from one to the other (at present) is through Argentine territory, crossing the Senguerr east of Lake Fontana, and this will probably remain the natural link between these valleys until (in the near future) a port and road are developed on the Cisnes. Speaking generally, the whole of this extent of Andine country, stretching from Lake Viedma on the south to Lake Paz on the north (nearly all of which has now become Chilean), possesses the same characteristics. To the west of it lie the unexplored snow-capped mountains and glaciers through the heart of which the rivers run to the Pacific. This great block or zone of mountain upland may possess the conformation of the archipelago to the west of it for aught we know, glaciers and snow fields filling up its inlets and blocking its straits. Or it may only be cut into broad blocks by the rivers which force their way to the sea, and no other continuous transverse depression may be found to cross it. We do not know; we only know what lies eastward of it in the centre, extending in hill formation to the pampas. Within the enormous basin of the Baker, this central zone is filled up with high and rugged mountains; with occasional breaks of elevated storm-swept plateaux, partially covered with dense forests, and everywhere intersected by the narrow valleys of the Baker affluents. Some

of these valleys, narrow though they are, present opportunities for colonising and cattle-grazing—such as the valley of the Mayer, the Tamango and others. The great lakes which lie about the region do not facilitate inter-communication so much as might be expected. They are inconceivably wild in their surroundings, and the force of the everlasting wind which sweeps from the west and north-west through the openings in the Andes across them renders navigation exceedingly precarious and often impossible.

The basin of the Aysen north of Lake Buenos Aires includes a region hardly less wild. There also are ribs of sierras, and disjointed massifs of irregular formation—eternal solitudes and eternal snows ever gathering strength from the vapour currents of the Pacific; but the forest thins more rapidly towards the east, and the young affluents of the Aysen meander gently through some very fine grazing lands. The same may be said of the valley of the Frias (Cisnes), where there is undoubtedly much promise for the future.

It must be noted that all the best grazing country lies high towards the continental water divide on the eastern frontier of Chile, and that all lines of communication (south of Lake Paz) must concentrate on the mouths of the Baker, the Aysen or the Frias. North of Lake Paz to the northern extremity of the disputed area, *i.e.*, to Mount Tronador (at the head of the great lake Nahuel Huapi), the conformation of the Patagonian Andes (as will be hereafter described) is not very dissimilar to that of the south. Here again we find the forest country dense and swampy towards the coast, drier and possessing more valuable timber in the centre, and opening out into wider spaces towards the east where colonization is practicable and the soil favours cattle farming; but we find it enclosed by disjointed and, on the whole, more regular and more formidable sierras.



LAGUNA BLANCO, NEAR HEAD OF AYSEN (OR SIMPSON).

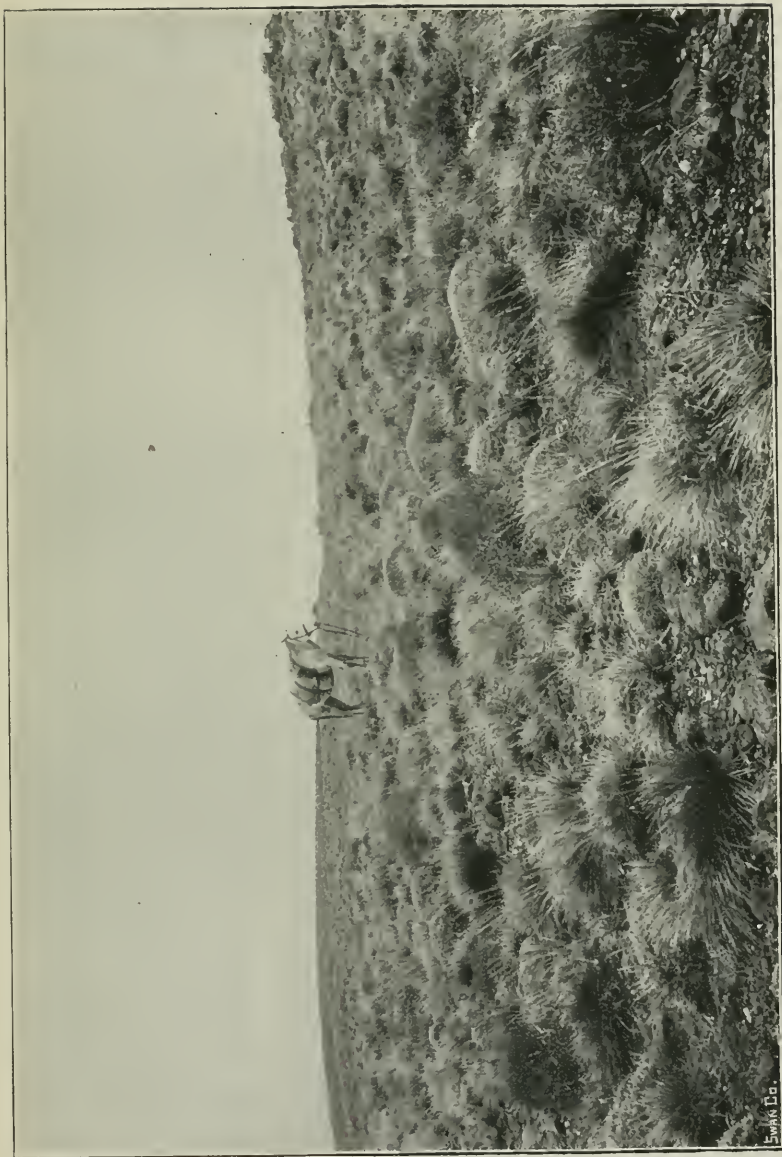
[Don Carlos Bruch.]

taking the form of short mountain ranges, and massing themselves into a series of lofty snow-bound peaks on the west where they overlook the inlets of the Pacific coast. Three great river basins divide this section of the Andes between them. Reckoning from the south, there are the Carrenleufu or Palena; the Ftaleufu or Yelcho; and the Manso or Puelo. Like the southern rivers, these also take up their affluents from a thousand narrow, steep-sided, and gorge-enclosed glens and glaciers, and carry their waters through the mountains westward, sweeping finally with strong currents into the inlets of the sea. Approach to the high central open grazing grounds from the Chilean side can only be through the narrow gateways afforded by these rivers—a short, but, at present, a difficult process of struggling over roads, or tracks, which must be subject to an eternal process of renovation and clearing. On the east the connection by road with the Argentine plains is open and free from obstacle, but the road is long (and often impassable from swamp) which leads to the nearest Atlantic port, four hundred miles away.

Seeing that all the best grass uplands lie at the eastern foot of the Andine mountains throughout this region, and that to the west there is a forest clad phalanx of rough mountain ridges, only partially explored (but across which it was well known that great rivers ran to the Pacific, affording by the line of their outflow a possibility of much shorter routes to Pacific ports than any which exist to the Atlantic), this part of the Patagonian Andes became a subject of special geographical interest in connection with the boundary settlement. The very first necessity in the process of reclaiming an uncivilized wilderness is the necessity for roads and communications. The first question that the settler, or the land investor, asks is the way to his market; and thus the possibility of opening up tracks through the

forest country from the grazing lands of the eastern Andine foothills became the primary object for examination, and the Boundary Commission of the Tribunal turned its attention to the problems connected with the Pacific Coast before proceeding to the examination of the Cordillera.

On the 18th March, 1902 (during the first season's exploration), we left Puerto Prat in the little steam yacht *Condor*, after meeting Dr. Moreno, the Argentine expert, who had crossed the continent from Santa Cruz for the purpose of arranging the programme for the field season. Captains Robertson and Thompson had crossed from Santa Cruz with Dr. Moreno, and their field of action practically opened at this point. Captain Robertson, who had seen much Indian frontier service, and was a most experienced surveyor, undertook the responsible duty of examining all the inconceivably wild country which stretched northward to Lake Buenos Aires. After making all necessary arrangements, Dr. Moreno returned to Argentina to meet me later on in the Lake district. Dr. Hans Steffen (the Chilean expert) accompanied me during the voyage up the Pacific coast and subsequently throughout the geographical reconnaissance in the Andes. Leaving the flat shores of the Esperanza inlet (where already there were bales of wool scattered about at intervals awaiting shipment), the *Condor* made good way through Kirke's Narrows (on an 8-knot tide), to rejoin the cruiser *Zenteno* at Dixon cove. Black clouds rested heavily on the blue-edged glaciers, and the rounded heads of deep sepia coloured bosses glistened with moisture above the fringe of the dark forest growth. Higher up the slopes there was evidence of the fact that even the dampest forests will sometimes ignite. Grey stalks of burnt and charred trees, grim and stubbly in the distance, gave an unshaven look to the mountain sides. With true Pata-



[Don Carlos Bruch.

“STIPA” OR “COIRON” GRASS, MATÉN.

Ewan Co.

gonian variety, the next day broke into brilliant sunshine, as the *Zenteno* turned her bow northward for the first of those coast ports which we planned to visit. This was at the mouth of the Baker river at the head of the Calen inlet, just on the south-east corner of the Gulf of Penas; and we had to shift our quarters from the *Zenteno* to the Chilean survey ship *Magellanes* (drawing only 15 feet) in order to get there. The Calen (or Baker) inlet runs almost due east for fifty miles from the Pacific before changing direction to the north (west of Vargas Island) for about fifteen miles to the little bay of Pisagua. To the east it thrusts an inlet to meet the mouth of the Bravo river, and to the south another arm reaches to the Pascua. These are important branches leading to lines of approach to the interior. The Baker branch (with Pisagua as the port) originates the road northward to Lake Buenos Aires, and to another lake to the south of it called Cochrane by the Chileans and Pueyrredon by the Argentines (now that the boundary is settled we will hope that the double naming of points within the disputed limits will cease). This road is fairly well developed as a forest and mountain track. Neither it nor any other road (with one exception, to be hereafter noted) hewn by the Chilean engineers out of the forest can be called a high road. It is a narrow swamp-bound pathway (near the coast)—good enough for mules and cattle, but not for wheels—with occasional stretches of “corduroy” planking over parts which are more especially deep in mud, and through which not even the marvellously clever Chilean horse, or mule, could be expected to flounder without some such precarious assistance. It does not even reach the seaport. The delta of the Baker is small for the size of the river, and there is no good anchorage near it. The northern of the two channels which enclose the swampy flats of the delta is the one selected for navi-

gation. But it is somewhat dangerous, with a terrific current sweeping through, and a shallow bar. The port is at present represented by a log hut perched on the lower slopes of a granite hill overlooking the northern channel. The road end (or beginning) is some twenty miles up the river, or it was so when we visited the port. We never reached the road.

On the 22nd March we started with two launches and a boat to make what proved to be a very interesting examination of the lower reaches of the Baker. The river was in full flood, with a strong and rapid current of turbid brown water sliding down in a broad sheet, breaking frothily against snags and projections, and forming swirling pools and eddies. Where it touched the bar it rose into breakers, and sent a long track of yellow water sweeping into the salt inlet. However, we crossed the bar safely, and then made slow headway against the stream which was washing up the banks, catching the broad leaves of the "pangue" (a sort of gigantic rhubarb in appearance) and lapping round the stems of half-submerged bamboos. So slow was our progress that it was late in the afternoon when we reached a point from which we might obtain a good general view of the valley from the heights flanking it on the north, so as to see well beyond the position claimed as the crossing-point of the Argentine boundary. We had passed the delta channel and were in a broad stream some 500 yards in width. We had left behind us the delta flats on one side, and the glacial cascades and cliff of the other, and gentler slopes and clearer spaces in the forest promised the possibility of an extended view. But the difficulty of forcing a passage through even a few hundred yards of such undergrowth as crowded down to the water's edge was very great. Rotten tree trunks and spongy moss gave way beneath us at every step—even the face of the granite knobs was covered

with soft and slippery things. Pangué and fuchsia on the river banks gave place to a stiff tangle of dwarf bamboo, and the "coi copihue" (*Desfontanea*) (a thick and elastic bush with lovely rose-coloured bell-shaped flowers, closely allied in appearance to the well-known "copihue" (*Lapageria rosea*) creeper of Chilean forests), with the infinite variety of beech, laurel, myrtle, dwarf palms, acacia, and ferns which love these solitudes and



RIVER BAKER.

grow in such unchecked abundance as to mass themselves above the slushy red and yellow moss into almost impenetrable solidity. Avoiding swamp-filled holes and the deep graves of decayed vegetation, we cut our way to something like solid ground at last, and this is what we saw. On both sides the wide and flat bottomed depression of the Baker the mountains rose in fairly regular grades and comparatively smooth slopes. Their spurs followed each other in diminishing perspective, to a point which

must have been far beyond the road end at San Carlos. Nothing of the nature of a narrow gorge was visible so far. On the contrary, the flat bottom of the depression was wide enough from foot-hill to foot-hill to show signs of many former variations in the river channel. These ancient waterways were quite unmistakable. The alluvium carried down by the river is washed to its banks by eddies and backwaters and there gradually massed into a restraining "bund," which is rapidly consolidated by vegetation. These "bunds" are not wide—often not more than a few yards in width—but upon them the prolific powers of nature in the matter of vegetation spread out a magnificent abundance. It is upon them that the Patagonian beech shoots upward to enormous heights, and extends its graceful arms in angular imitation of the Scotch fir or the "stone" pine of Europe. With the beech the giant laurel (*laurelia aromatica*) and many species of acacia compete for foothold, shadowing the white starred myrtle and the shimmering rosy fuchsia which droop their flowers to the flood and kiss the ferns and the great umbrella leaves of the "pangue." It is very wonderful, because this tree growth testifies to the age of these narrow borderlands of the river. Across that borderland, on the other side of it, one may drop straight into a swamp, with reeds and rushes and waterplants crowding a submerged and half-undeveloped space of valley bottom. From the spurs of the mountains looking down it is very easy to mark the graceful concentric curves of many such an abandoned river-rim, or border. The tree line shows where the current curled and twisted in years gone by. From the very midst of the flats two small morainic-looking hills arose, giving the whole depression the unmistakable appearance of an ancient glacier-filled inlet, now in process of being filled up by river action and raised to the level

of dry land. It was indeed impossible to avoid the conviction that all this lower reach of the Baker (extending at least to the point where unnavigable rapids occur at San Carlos and the forest road begins) was once an arm or inlet of the Pacific. A singularly wet and sloppy camp on the river bank concluded the day's journey. It would have taken another day to reach San Carlos at the steam-launch rate of ten miles



RIVER BAKER.

a day up stream ; so we dropped quickly down on the top of the flood to the *Magellanes* on the 23rd.

The Baker river road to the great lake district may be considered the main road branching from the Calen, and it is an open and practicable route in spite of the disadvantages I have indicated. Whether it will ever be worth its up-keep is problematical. But there are other tracks which are not unimportant which equally take off from the Calen into the interior, and add some-

thing to the significance of a port at that point of the Pacific coast. That branch of the Calen inlet which strikes eastward also terminates in a river (the Bravo), which rises under a low water divide (rather over 1,000 feet above sea level), dividing it from the head of the Engano river, which drains directly to the eastern horn of Lake San Martin. This is an instance of a low transverse parting across a high ridge of the western Cordillera, the head of the Bravo (flowing to the Pacific) being barely a mile from that of the Engano. Similarly, another branch of the Calen inlet runs southward to meet the Pascua river (the valley of which, according to Dr. Steffen, exhibits all the characteristics of an ancient inlet of the sea), draining from the western horn of San Martin Lake. The port at the mouth of the Pascua is also called San Carlos. It is not a good port, being too much exposed to the north-west gales. A bad river passage of fifteen to twenty miles up stream leads to the road end, where there is the usual group of engineers' huts. The road then follows the river, crossing it once, and surmounting high spurs on its banks. It rises to 1,700 feet at one point and then drops—the level of San Martin Lake being about 950 feet. The Pascua is only separated by a low pass from the Bravo near the mouth of the latter. Bearing in mind the remarkable changes in local elevation which are everywhere apparent about the Patagonian coast (due to an oscillation of level which appears to be still in active operation), it is hard to believe that a salt-water connection did not once exist between the two great oceans, the Atlantic and Pacific, at this point. Darwin, arguing from his researches in the Santa Cruz valley, maintained that such a connection must certainly have existed a little further south. An exact examination of land formation at present buried beneath ice and snow between the Pacific and the Lake regions is impossible, but further identi-

fication of fossils common to both seas may assist to solve this problem, which Darwin considered to be solved already by the result of his own discoveries. Sr. Michell, the clever engineer who is responsible for the Buenos Aires Lake road, shares Darwin's opinion, and he is an excellent authority. It is at least obvious that a traveller may cross from one ocean to the other without reaching any altitude greater than 1,000 feet at this part of the Patagonian Andes.

We rejoined the *Magellanes* on the 23rd and retraced our course westward to the Gulf of Penas, where we were to exchange once again into the *Zenteno* preparatory to crossing the storm-swept gulf on our northward way to the Aysen. The snow lay low on the hills, and the great glacier Jorge Montt gleamed with an icy smile under a dull grey sky. The sea changed from light green, with yellow smirches, to a dead iron grey, and the leaden hills were mottled with purple patches and white streaks. The glaciers about us were all more or less withdrawn from the scarred furrows of the mountains where they once had been—evidence of shrinkage was everywhere plain. Opportunities for exploring the depths of the encircling jungle growth were not wanting. We landed frequently during the periods when the ship lay at her anchor at the end of the day's run. At Hale Cove we found a lovely fringe of unexplored vegetation, where all the grand processes of natural development—construction, destruction, reconstruction—were in full evidence. Trees rotting and turning gradually from pale white skeletons into lumpy masses of spongy moss; then creepers and ferns and seedlings take possession, and the old life bursts out into new growth. Great palm-like ferns spread out their fronds from the midst of the weird old stump, till at length the whole collapses, crumbles, heaps into a slimy,

sticky mass, and the old growth forms a fresh basis for the new. At Laguna we found gigantic bushes of fuchsia intermixed with beech and "maiten," myrtle, laurel and spreading bamboo; all enfolding a little grass-edged bay where we lay snug, and fished for our dinner. Every day, on every side, were the everlasting hills, forest-clad, mysterious, impenetrable and unscaleable—golden in the sunlight and indigo in the shade—with the scars of granite cliffs and the glint of glaciers above the green; but always the same sober depth of colour, dark and monotonous, reaching up to leaden clouds and reflected in perfect harmony in the dead flat sea below.

A noteworthy feat was performed by the skipper of the *Condor*, a young Dane in the Chilean service, before we left Hale Cove. He ran up through the straits to join us from Punta Arenas (750 miles) in seventy-two hours, steaming day and night through these marvellous sea channels, never leaving his post, and never closing an eye, in order to be up to his programme time with the English mail letters. The unkindest act that our courteous and genial host, Captain Wilson, ever committed, to my knowledge, was in asking that young man to dinner on his arrival. He could hardly sit up straight, he was so sleepy.

The 26th was something of a red-letter day. The barometer had been rising with such activity that we fully anticipated a north-westerly gale. For once it betokened clear weather, and we saw the great volcanoes of St. Valentin, Maca and Cay in all their grandeur. It is not usual to see these peaks at all. Under a clear blue sky the *Magellanes* steamed into the Aysen inlet next day (after we had parted with the cruiser *Zenteno* for good), amidst fat, thickly-wooded islands, and under purple hills whose summits were yellowing to the touch of winter; scattering the reflection of hills and

islands (all one with the islands themselves) into little pieces as we went. Chacabuco is a land-locked, forest-girt harbour, with snow peaks looking down into it from all sides. I should like to describe it, but it is impossible. Shallow, empty, inefficient words (even at the end of Ruskin's pen) could never conjure up an ideal which would reproduce the impression of the eternal majesty, the solemn magnificence, of that never-



THE AYSEN RIVER.

to-be-forgotten scene. Remember that it was fine weather and the glamour of glorious sunshine was spread over the best of Patagonian coast scenery at the best (the yellowing) time of the year.

From Chacabuco harbour to the mouth of the Aysen is six good miles, and there is no anchorage for a ship drawing 15 feet nearer than Chacabuco. So that it is not an ideal port, any more than is Pisagua. In order to reach the delta of the Aysen we had once again to

shift into the little *Condor* and finally to cross the bar in boats. The river is about half the width of the Baker, with nothing like so strong a current (which may have been merely the accident of meteorological conditions), and we had no great difficulty in rowing as far as the commencement of the road, which started from a point a few miles up the river. Here we found a dilapidated hut, and camped for the night. Next morning we followed the Aysen road track for some distance, and found that it was but a narrow way cut out of the bamboo jungle, deep in soft, unfathomable mud at intervals, where a log causeway offered a slippery alternative to a mud bath and that it was quite impracticable for anything on wheels. Two sorts of bamboo are massed in a compact undergrowth beneath the great trees of the lower Aysen—the coligué (*chusquea coligué*), which is a tall, feathery bamboo, and the quila (*chusquea quila*), which is a dwarf variety of great elasticity and remarkable toughness. The latter affords the chief food supply for pack animals and cattle, and they often feed on nothing else. It is useful, but it is a formidable obstacle to road-making and absolutely impassable without clearing. The weather had been fine, and the wind had dropped for a short space when we visited the Aysen, and the mosquitoes in consequence were in full force. I have seen many mosquito-ridden districts, but never one to compare with the Aysen valley. It was only necessary to strike a clump of “quila” in order to drive out thousands to swarm upon the passer-by. Their numbers made it impossible to defeat them, and they bit ferociously. Nevertheless, malaria is unknown on the Patagonian coast so far south as the Aysen. Either the malarial poison, or else the special mosquito which propagates it, does not exist beyond certain latitudes. Which is it?

There is much interesting topography about the lower



A FOREST ROAD, SOUTHERN CHILE. [*Don Carlos Bruch.*

Aysen, though some of it is still open to conjecture. Two important affluents join the river from the north and south respectively near its mouth. From the north comes the Manhuales which, branching into two eastern arms, leads to the central uplands. From the south comes the Blanco, said to drain from a lake region (the Paloma) which closely borders the Aysen further up its course, and it is only separated therefrom by a low divide and swamps. Here there is some useful grass country. To the north of the Aysen and west of the Manhuales the hill formation is low and unimpressive, the general strike of the ridges being from N.E. to S.W. South of the Aysen a very definite ridge stretches its length almost due east and west. The mountain conformation is very irregular at this point, all the magnificence of the Cordillera being concentrated in the giant volcanic peaks of Maca and Cay, overlooking the islands and straits of the coast from a western position which is almost isolated. At many points along the course of the Aysen river there are wide spaces with great depth of sandy earth which might be cleared and developed. These spaces exist at intervals in all the many branches of the Aysen system, the Cohaique valley, which is the most direct eastern affluent of the river, and leads to the most practicable pass connecting the Pacific and Atlantic basins by the head of the Mayo river, being more or less an open grass valley. There is much forest on the higher spurs and mountain slopes and more valuable timber to be found in them than in the forests of the south. The highest point of the water parting between the heads of the Mayo (Atlantic) and Cohaique (Pacific) is about 3,700 feet above sea level. Low as it is, it is frequently blocked by snow early in May. There is some fine undulating grass country at the head of the main branch of the Aysen system (the Simpson), a part of which falls to Argentina

by grace of the King's Award, the actual streamlets which form the ultimate springs of the river (rising from the continental water parting) being in flat or undulating ground, where demarcation would be difficult if based on a water parting. There is similar country to the north of the main stream between the heads of the two northern affluents of the Aysen, where only a narrow neck of undulating land separates the Nirehuao (belonging to the Aysen basin) from the swamp-enclosed Goichel, which meanders into a small lake called the Coyet, of which the hydrographic connection is with the Atlantic. The altitude of the division between Atlantic and Pacific drainage at this point is not much more than 2,000 feet above sea level, but the upper affluents of the Aysen do not (according to Dr. Steffen) offer so good an opportunity for a future road connection with the Aysen inlet as does the Cohaique valley and the main river. The valley of the Cisnes or Frias (as already pointed out) must at present be regarded as a separate system, although there is connection through Argentine territory by Steinfelt. Indeed it is an open question whether the commerical outlets of all the many valleys of the Baker and Aysen systems—valleys which will undoubtedly offer facilities for remunerative cattle-breeding—will not be gathered into some one central line of road or railway leading to the Pacific coast and Puerto Montt, rather than be maintained by so many trans-Andine tracks. The establishment of “*frigorificos*” (*i.e.*, meat-freezing establishments) at the road ends on the Pacific coast might make it well worth while to maintain these forest tracks in repair, but such a development is far off at present.

The forest trees of the lower Aysen are magnificent. They tower above the swirling river to immense heights; the beech and laurel being specially prominent above the scarlet masses of wild fuchsia and the white stars

of the myrtle. Everywhere, dipping broad leaves to the stream, is the rhubarb-like "pangue" with an occasional canopy of swaying bamboo; and beneath them all is the thick carpet of red and yellow moss with many small flowering things (amongst them yellow violets) peering out to the wind and sky. The chequered lights on the purple-brown flood, the visions of snow peaks and glaciers and the vast silence and solitude of



NEAR THE HEAD OF THE SIMPSON RIVER (AYSEN).

it all, entwine themselves into a picture-memory which no years can efface—no impression of other lands destroy.

From the Aysen to the mouth of the Yelcho (also known as the Ftaleufu—the river of the "16th of October" valley colony) we held a passing review of some of the most magnificent of those snow-capped volcanoes which stand sentinel over the Eastern Pacific shores. Maca, guarding the entrance to the

Aysen inlet, was towering above us as we groped our way in a thick fog out of the Chacabuco harbour. The fog suddenly shifted like the curtain of a theatre; the little *Condor* behind us could be seen coming out of it as through a hole in a wall; and then Maca blazed forth in splendour and glitter, for we were right under it. Turning northward we were abreast of the round cone of Mentolat at 8 a.m. Snow streaks striped its sides vertically where furrows had been ploughed during the years of active volcanic existence—it is a typical volcanic cone. To our right front was Melimoyo—all snow-covered, with longer, gentler spurs, surmounted by a conical cap; and then followed Yanteles, Corcovado, and Minchinmahuida in order as the day wore on. Yanteles (which is clearly connected with the sierra of the Carrenleufu, or Palena, river) carried much snow, but did not present such unmistakeable volcanic features as the cones of Mentolat and Corcovado. The latter runs to a sharp curved peak which is almost identical in appearance with that of the Matterhorn, and the long snaky furrows which rib its sides look as fresh as if they were scooped out by the lava floods of yesterday. One by one we passed them in review until the lights of evening shone.

The snows picked up the lighter tint of the deep rose colour of the eastern sky after the sun had dropped below the Western horizon; and the pink hues stole up the mountain sides until only the peaks were pink. Then the clouds of Corcovado's flank roped themselves into thinner streaks, and the few round fleeces on the spurs beyond folded and drifted out into darkness, ere the cold finger of deadly white stillness was laid on the shrouded peaks and the sky behind faded to faintness. Suddenly a magnificent afterglow shot up like a resurrection, and the shadowy world below was steeped in mystery.

The promise of the Yelcho as a Pacific port and gateway to a line of interior communication is somewhat brighter than that of the Baker or Aysen. The harbour is better. The anchorage is about three miles south of the river entrance in 15 fathoms, and there is accommodation for a dozen ships behind sheltering islands. The main branch of the Yelcho debouches southwards through very extensive shallows which reach from the river mouth almost to the island of Pudhuapi opposite. This shallow sea, or half-formed delta, bristles with snags and washed-out débris. The entrance to the main channel is very narrow and the bar is obstructive—two or three feet of water only at low tide and an average rise of about three feet. Near the entrance there is anchorage for steam launch or boats. Here a road commences which cuts off a preliminary bend of the river and reaches through five or six miles to a point where the current is strong. A line of rough-built log houses and a pier occupies a position about half-way.

Beyond this road it is all boat navigation to Lake Yelcho, and through it. Six miles beyond the lake the river takes a remarkable bend, forming one of those acute elbows which are peculiarly characteristic of the river courses throughout the Patagonian Andes. There is said to be no space for occupation of any importance so far, the lake being steeply enclosed. There is, however, a certain width of opening about a western affluent of the lake. A track has been made following the Yelcho to its head in the 16th October valley, but it is at present only a jungle track. It reaches little higher than 1,000 feet above sea level anywhere, and is, consequently, superior to an alternative route by the Renihué further north, which involves a pass (The Navarro) of more than 3,000 feet in altitude and the passage of a whole series of lakes. This affords a fair prospect for a commercial highway. It is said that it is possible

to travel from the port to "the Colony" in four or five days at present under favourable conditions of flood. With steam launches this time would be shortened considerably. There are runs suitable for cattle in the valley. The timber supply is fair—beech (*Fagus Dombeyi*) and laurel and "ciruelillo"—but the cypress (the most valuable wood of all) is only found in the upper valleys. The promise for the future in such a road lies in the possibility of capturing the wool and meat traffic of the border colonies and the establishment of "frigorificos."

With a falling barometer and rising wind, we ran northward through the Gulf of Ancud, between the island of Chiloé and the mainland, to the Reloncaví inlet, to visit a connecting link between east and west across the Andes which is one of the most important of the series. A small river called the Cochamo, which runs into an arm of the Reloncaví inlet, affords an opening which leads fairly straight to the valley of the Manso river—one of those great transverse lines of depression which intersect the Patagonian Andes so frequently—crossing an intervening water parting 1,080 metres (about 3,500 feet) above sea level. The route drops from the divide by a small stream called the Morros into the Manso at a great bend, or elbow, which diverts that river suddenly from a north-westerly to a south-westerly course. For some ten or eleven miles below this point the Manso falls rapidly, dropping about 2,600 feet ere it joins the Puelo shortly before debouchement into the sea. Up to the foot of the rapids (*i.e.*, ten or eleven miles below the bend) boats can be taken by the Puelo route—but no farther. Consequently, the Cochamo is regarded as the most promising route of the two, in spite of the pass between the head of the Cochamo and that of the Morros. Once in the upper Manso valley the road is open and fairly easy. The

valley is already occupied to the east of the bend where valuable grass and timber land is to be found, but there is no occupation below that point. The connection with Argentina is by an affluent of the Manso called the Villegas, which leads up to a pass 1,260 metres (or over 4,000 feet), from which it descends to the Argentine pampas drained by the Carrenleufeu to the River Limay. This pass we crossed later on and it will be described here-



RIVER COCHAMO.

after. It is an open and easy pass. The Cochamo will deserve careful attention as a possible trans-Andine route of the future. Indeed there is a great deal of traffic on it already. The points to be noted are its easy accessibility, its growing development, and the great fact that it is a land route all the way to Southern Chile. It is true that the Cochamo river and the Puelo both end in the sea, but it is not necessary,

in order to reach the Chilean settlements, to follow the Cochamo to the sea. An overland route skirting the hills to the north, and crossing the indentations of the Reloncaví inlet can be followed to Lake Llanquihue and the German settlements to the south of that lake, or turning southwards before reaching Llanquihue, it can pass under the great Calbuco volcano to Puerto Montt.

To the north of this overland route, starting from the same point near the head of the Limay, is another, better known, more fully developed, and most fascinating route, which, so far from being overland, is a waterway for quite two-thirds of the distance between the eastern end of Lake Nahuel Huapi and the Western extremity of Llanquihue. It is a regular and well-traversed route, with steamer communication established on the Lakes by the enterprising Argentine firm of Hube, Achelis y Cia. It involves the passage of one pass (Perez Rosalez) only, and this pass is about 1,000 metres or 3,300 feet above sea level; but it is a stiffer pass than either of the Manso passes, and trans-shipment at least twice on the lakes is a serious drawback to commerce. There is much more to be said about this route later on. Meanwhile, it is important to observe that the Cochamo-Manso road is much wider, much better constructed, and altogether far in advance of the roads further south. The "planking" or corduroy is better laid and more continuous, and the little "bodegas," or engineers' quarters, at intervals, are well-built timber constructions, with some pretensions to comfort and convenience. Its weak point is the present road end from the Cochamo to the little wooden village of Rahuelhue on the Reloncaví shores. This was (in April, 1902) carried along the shady side of a steep, basaltic, forest-covered hill, which had recently been subjected to a heavy rainfall,

It was the mud which made it formidable. No foot-passenger could have waded through that mud, and I am of opinion that nothing but a well-trained and sagacious Chilean horse could have picked his way along that road. It appears that the natural action of four-footed beasts on a muddy road is to plough it into transverse ridge and furrow. Here the furrows were deep in almost bottomless slime, and the ridges intervened with smooth and glacial sides, culminating in a knife-edged apex—steep, and short, and intensely slippery, so that from furrow to furrow one's steed had to stride as if across a series of mud-walls. Occasionally a little flat space at the roadside beguiled him (it was advisable to make no suggestions) into what might lead to a temporary wade through a mud-pond—but not often. It was impossible to say what the black flat surface might hide. Beneath it might be an intricate network of tree roots from which it would be impossible to withdraw a hoof, and the end of the experiment would have been black and muddy disaster. The ridge and furrow was generally safer. The road ended with a last shoot down on to the flat. Setting all four legs together, one after another, horses and mules shot down the slide, landing, all in one piece with their riders, on the shingle below.

Rahuelhue was a typical little village, one of many such that clustered along the shores of the inlets, offering little vistas of green clearings and potato crops, and reminding one much of Irish scenery. The snuffling pigs and pretty-looking girls with their hair in long tails, and without stockings, supported the resemblance, and proclaimed the inhabitants to be Chilotis. There is a very remarkable analogy between Chiloé and Ireland which is due to something more than its productiveness in the matter of pigs and potatoes. The latter must be indigenous. Captain Maldonado, of the *Magellanes*

(an observer and writer), is himself a Chiloti, and he has differentiated between upwards of 100 varieties of potato in the island. If free, frank, generous hospitality and a general tendency to untidiness and idleness count for anything, there are certain points of resemblance between Chiloti and Irish character which it is impossible to miss. And yet the Chiloti, like the Irishman, is often as thrifty and industrious as a Scotsman, and far more sober. He is, in fact, the working-man of the Pacific coast in all that appertains to the sea. His schooner-rigged boats may be found gliding about the inlets laden with timber far to the south of Chiloé. He is a woodcutter, agriculturist and fisherman. In one of the little harbours of the Messier Straits we found Chiloti mussel-gatherers. They had gathered in their stock and strung them in festoons to the tree-branches to dry. Three sorts of shell-fish are collected by them—"choro," or mussels; "takas," a species of cockle; and "picos," which more resemble the barnacle. Choro soup is excellent, and choros and potatoes form the staple food of these cheery seafarers, who are often absent from the island home for months, cutting out such valuable timber as they may find in the Patagonian forests which enclose the inlets. The timber supply increases in value towards the north and in the drier climates. About Reloncaví there is much wood that is commercially useful. The Muermo, or Ulmo (*eucryptia cordifolia*), grows to a gigantic size, and yields excellent timber for railway sleepers. The Alerce (*Fitzroya Patagonica*) only grows on the higher slopes. It is a reddish pine, very light, and makes excellent shingle for roofing; but the wood which was turned to most general account throughout the Pacific coast regions was the *laurelia aromatica*, in spite of its inferior quality in grain or durability.

On the 3rd April, we left Reloncaví for Puerto Montt,

making tracks through a pale green sea, flat and streaked with purple. The clouds, after two days' downpour, were in rolling wisps, leaving gaps through which we could see the gleam of Yaté's glaciers but not the peak. Gradually they folded over the mountains, leaving a dappled sky above the blue of the sea-way entrance to Puerto Montt. It was quite new scenery. Smooth green islands sloped their rounded shoulders to the sea, and hedges partitioned their undulating crests into spaces of green and yellow. The islands were low, too, quite unlike the islets of the Straits, and about them were sailing small woodman's yachts, cutters and schooners, as if we were in the Solent.

The little town of Puerto Montt, at the southern extremity of the central valley of Chile, is an unpretentious collection of wooden houses with straight streets and narrow byways, which very possibly has a future of some significance in the coming ages of South American railway extension. Already there are some flourishing commercial houses, and already there is talk of railway connection with the civilized world. At present it shelters a peaceful and somewhat indolent community, whose placid lives are unruffled save by the arrival of the weekly mail, or little local tornadoes of religious fanaticism. The town is peopled by Chilotis chiefly, and in the narrow but picturesque streets running upwards from the shore to the grassy downs, where its little world congregates for pleasure in the garden of the Miramar, you may see pretty Chiloti children paddling about in the mud with ducks, dogs, cats, parrots and pigs, in contented enjoyment of happy freedom from board schools. Often the tow-coloured head and blue eyes of some better-dressed urchin bear witness to the presence of Danish or German colonists, who (the latter especially) are in strong force in these southern districts. They are all loyal to the Chilean

flag in politics, and mostly of the Roman Catholic persuasion in matters of creed, the Jesuits holding a prominent position in the town. But their sectarian differences are many, and their methods of advertising them are primitive. There are a few influential Scotch and English settlers to the South of Lake Llanquihue, but very few of the Latin races. The Government of Chile does not altogether encourage the immigration of Latin peoples, nor was much inducement offered to Boers to settle in Chile. The fact is, that there is no room for people who will not take to agricultural work in South America. They would starve. On the island of Chiloé there is a dense coast population and there is no real lack of labour in this part of the country.

Puerto Montt is happy in the possession of at least one scientific observer who keeps the record of all natural phenomena which fall under his observation. Dr. Martin has been there for about seventeen years, and there is little that he does not know about the climatic and physical conditions of Southern Chile. Here there is a rainfall of about six or seven feet, and a rise and fall of twenty feet on the tide. With such a rainfall in these latitudes it is not surprising that every fruit will grow to perfection and vegetation should be strong and abundant. Passing through Dr. Martin's little garden (full of raspberries, strawberries, gooseberries, apples, pears and all sorts of English flowering plants), we climbed to where English oak, ash and elm struggled in company with the Australian eucalyptus and wattle to outpace the indigenous growth of muermo, araucaria (the familiar puzzle-monkey tree) and laurel, which bunched together with fuchsia and hydrangea, formed an impassable thicket, crowning the downs and crowding the slopes. These rolling grass downs, stretching away northward to the hills, fold upon

fold, are but moraine formations of ancient glaciers which have left behind them erratic blocks of granite. Thick grass and clover spread between the gorse bushes and amongst the tangle of immense hedges of bramble (blackberry), which form a notable feature throughout Chile, and have grown to be something of a nuisance in the land. The alerce has disappeared—cut away from the forest with reckless disregard to the future. The want of forest preservation is lamentably apparent in Southern Chile. All the Lake steamers burn wood, and they are not particular what wood they burn.

One delightfully lazy day was spent on the small island of Tenglo, off Puerto Montt. Hither, in 1856, came a German farmer named Hoffman, and here he has remained as uncrowned King of the island, with a large roomy wood-built farm-house for his palace, and a courtyard crowded with fat poultry on the edge of his domain. Thick woods of myrtle and fuchsia crown the slopes enclosing the farm, and reach downward to the sands, here and there leaving wide intervals of grass-covered downs hedged off for sheep and cattle grazing. But the notable feature of the island is its fruit. It is the centre of a great cider industry. Behind the farm-house a garden stretches over the central flats, within which is an orderly tangle of flowers and flowering shrubs such as only a gardener in Chile could possibly get together. Dahlias, datura, hollyhocks and roses (bound together by blue ribbons of forget-me-not) filled up the spaces between acacia and eucalyptus, olives, oaks and maples. Then came the long rank grass, making successful efforts under the hot sun to develop into hay, and in among the grass, in crooked formation, stood the apple-trees. First a scarlet tree (nothing but a vision of round, shining red apples) bending down its branches to the grass, propped as far as possible

with the rusty and moss-coloured ribs of old palings. Then a yellow tree—all yellow—without a touch of green, lopsided with its own weight, leaning up against a russet-brown tree, straighter and stronger, with something of a show of reddening autumn leaves and a dusting of pippins throughout the foliage; then a long deep row of heavily-weighted trees, bending under their own burdens, propped where propping was possible, dropping their over-weighted ends to the autumn grass and almost audibly groaning under the penalty of their own fruitfulness. At other times, and in other places, one might write of Chilean peach trees almost in the same terms. Chile is the land of fruit.

Over the Tenglo island that day a sky of Patagonian blue was spread, and the air was so still that a stone thrown by a boy at a bird on the shore could be heard on the cliffs half-a-mile away. If there is charm in variety the climate of Southern Chile is the most charming in the world. No one (not even the sailors) can tell what may happen next. The barometer gives no indication, but just follows the changes of wind and weather. On that Sunday the line of snow-capped volcanoes stood out to the east and north-east as clearly cut against the sky as are the peaks of the Himalaya in the month of November; Osorno, Calbuco, Tronador, and Yaté were in all their glory, cut in clean white angles out of the spotless blue. Osorno is a symmetrically conical peak with a white head and white snow streaks ribbing its sides below. It is impossible to see Osorno and not recall the familiar features of Japan's holy mountain, Fuziyama. Calbuco is not so regular, and its temper is still regarded as uncertain. Calbuco was puffing smoke when we saw it, and it is not many years since a broad way was cut through the forest from its summit to the shores of Llanquihue by a flood of lava and red-hot cinders.

Puerto Montt was a roadside resting-place on our rapid journey through South America, and we left it and our happy-hearted and courteous naval friends to take to camp and saddle once more for the exploration of the recesses of the Andes.



HEAD OF AYSEN (OR SIMPSON) RIVER.

[*Don Carlos Bruch.*

CHAPTER XI.

SOUTHERN CHILE.

ON the 7th April, 1902, we started (Dr. Steffen, Lieutenant Holdich and I) northward from Puerto Montt to find our way through the Andes to the great lake of Nahuel Huapi at the foot of Tronador, where our wanderings in the Andes were to commence. The road was uneven and stony, and it rose and fell in rough undulations over the long folds of the plain which stretched in cheerless monotony to the low hills of the coast range. To a great extent it was forest land, but forest land shorn of its chief beauty. Nothing was left of the once magnificent alerce forest but certain grey and weather-beaten stumps of huge diameter, within which, and over which, a garden of jungle had artfully twisted itself. It was said that four-and-twenty people could conveniently seat themselves about one such tangle, enclosed in the rotting wooden walls of a once famous tree. Up to the roots of these grim old stumps, and bunching to thick, impenetrable masses of undergrowth, was the common bramble—the blackberry of English lanes—weighted with fruit and stiff with the rankness of its growth. Nobody gathers the fruit in Chile; it just rots on the bush; whilst another low-growing plant with a round and tasteless berry is much in favour amongst jam makers. The bramble is not indigenous any more than is the ash and the sycamore, both of which make a brave show in Southern Chile. Dr. Martin is of opinion

that English vegetation will gradually shoulder out the aboriginal growth, especially with the able assistance of the bramble, which literally sticks at nothing in order to obtain a foothold. There are vast hedges of it about Santiago. Señor Bertrand rather questions its European origin. He agrees with Dr. Martin that the forest destruction about Puerto Montt must certainly affect the rainfall in that region. Fortunately, there is rainfall to spare in a district which boasts of *thirteen* months of rainy weather in the year. Travelling along the uneven road we met many specimens of the returning harvester trekking southward to his Chiloé home after the gathering of the autumn crops in Osorno. It would not be much of an exaggeration to say that they were all drunk except the children. The drunkards on foot maintained an uneasy rate of progression, but to the drunkards on horseback the road offered no spasmodic difficulties whatever. Drunk or sober, the Chilean is perfectly happy in the saddle, and when three half-caste Indians got their muddled heads together for an interchange of civilities with the assistance of one bottle of liquor between them, their three horses leant up against one another for support after a fashion which a Spaniard would pronounce to be "muy sympatico." But it would be by no means fair to estimate the sobriety of the Chilean agriculturist of the south from an exhibition of this sort. Had they been Irish harvesters, or Kentish hop-pickers, returning from the season's field work, it would have been much the same. The Chiloti (and these people were mostly Chilotis) is a purer breed of half-caste between Indian (Pehuenche) and Spanish than are most of the countrymen of the mainland. He has a splendid aptitude for liquor certainly, but none the less he is a sober, honest workman whilst his work is in hand. He will work night and day, living on nothing but meal and water until his work is done. And then

he will return happy to his beloved island, to live in idleness on potatoes and shell-fish for the rest of the year. In his cups he is a little dangerous, so we passed them all discreetly by. Most determined efforts have been made by the Chilean Government to suppress this prevalence of drunkenness. The liquor laws are most severe, and a man who is once classed as an habitual drunkard runs a great risk of being confined in a lunatic asylum.

Over a very considerable width of good agricultural land to the south of the Llanquihue Lake there exists a strong colony of Germans. The German political revolution of 1848-1852, and the religious persecutions subsequent thereto, sent a number of German Protestant families to Chile, and here they settled and have multiplied exceedingly. The German Roman Catholics (Westphalians especially) have settled in amongst them at later dates. They are all of them most fanatical; religious storms are ever brewing or raging; but in spite of their sectarian differences, they are all absolutely loyal to the Chilean flag. They are not worried about insignificant details by Government officials. The Chilean Government is only too anxious to secure a promising class of colonists and is at some pains to obtain those of special races. Concessions of land are made in Valdivia, Llanquihue, and Chiloé, and regular contracts entered into for the supply of colonists from Europe. British, Dutch, Danes, Swiss, Swedes, Norwegians and Northern Spaniards are specially invited as immigrants, yet it may be doubted if the Chilean Government is favourable to any large communities of any one nation in any one place, or would approve the repetition of the experiment which has turned a good slice of Southern Chile into a German settlement. The Germans have never amalgamated with Indians. In every settlement there is a Protestant and a Roman Catholic church; the schools are



OSORNO.

conducted in German, and Spanish is regarded as a foreign tongue. Dr. Martin, however, considers these people as strictly bilingual.

Puerto Varas, on the western edge of the Llanquihue Lake, is a long straggling town with two wooden piers sticking out into the lake. The German hotel is remarkably clean and comfortable and well found. Visitors from Valdivia come here for a change of air and scenery. At Puerto Varas it is necessary to wait until the little steamer run by an Argentine firm (Hube) is prepared to cross the lake in the right direction, and until the varied weather conditions admit of the trip being safely made. We were favoured with some remarkably wild weather. A falling barometer and the wind rising to a gale obliged us to defer our start for a day or two. Then with heavy rain clouds looming in the east, and a thick lake-mist sweeping before us like a vapour veil withdrawn from above, we paddled our way cautiously along the southern shore to a point where a few wooden shanties denoted the existence of the eastern port of the lake. The "hotel" here is but an outhouse run by a German shoemaker, but it is quite sufficiently effective in its kitchen arrangements.

Rising in gentle undulations from the southern shores of Llanquihue were many green square miles of pastoral country, neatly partitioned into the farm holdings of the German colonists who have settled under the western slopes of Calbuco. Not far from where the green acres give place to the forests of the Calbuco foothills, a wide grey ramp seems to have been cut clean and sharp out of the forest leading from the lake edge up to the smoking summit of the mountain. This has been there since 1893, when the last eruption took place, and a broad stream of red-hot ash rolled downward to the lake, clearing a course through the forest which will be a landmark for centuries. Osorno, which stands straight-

edged and triangular on the north-east of the lake, has never been known to show signs of activity by any of the present inhabitants of the coast. Darwin records that he saw it smoking about the year 1835, but Darwin's observation stands alone so far as I know.

Between Llanquihue and the next Chilean lake (Todos los Santos) on the east of it, is a forest ride; and a forest ride of such fantastic beauty that the like of it is not to be found out of Chile. Calbuco was behind us; to the left was the clear white cone of Osorno, to the right were grey granite cliffs, and from the cliffs to the lava beds of Osorno was primæval forest. Long, weird white-armed skeletons of the ancients of this forest pointed to the smoking summit of Calbuco, or wound themselves about the thick green canopy of younger tree generations, which reached with strong straight stems out from the abundance of the impenetrable undergrowth. A few late autumn flowers still looked out along the edges of the track, and where the beech made its fight for existence it blazed like a scarlet danger signal. And under the scarlet beech, and beyond the tree stems where they opened out into spaces which one might peer through, was the bluest of all blue rivers, ice-fed and glacier-tinted, hurrying fast from lake to lake with white lace frills and spurts of foam, making music to the echoes of the cliffs. Skirting the very edge of the Osorno cone, we dropped after two hours' riding on to the edge of the next lake—Todos los Santos.

When a man who has travelled far and seen many lakes in many countries, sets himself down to write of the most beautiful lake he ever saw in his life, he finds it difficult to choose superlatives in the British tongue which may serve to paint the picture with all due force and without detriment to the perfect harmony of his ideal perspective. Perhaps the superlatives are better omitted. It was a quiet clear blue day at the end of a stormy black and



SWANBO.

LAKE TODOS LOS SANTOS.

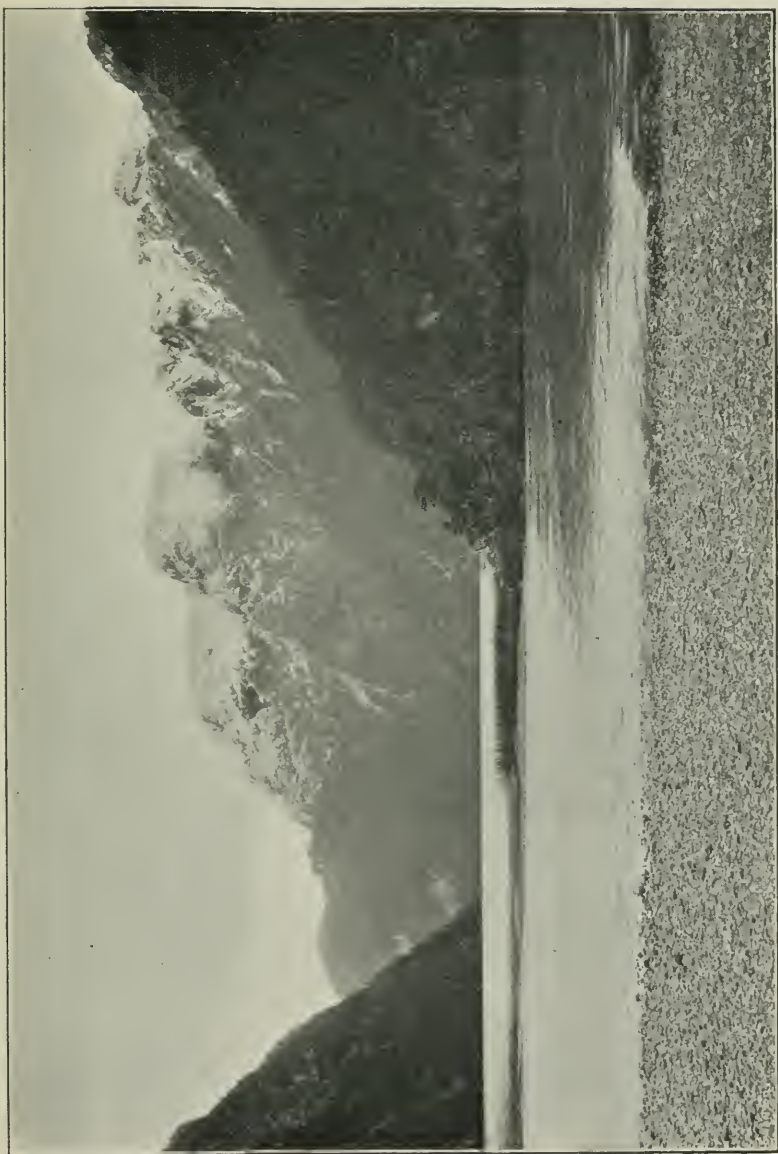
[*German Wiederhold.*]

white morning. The lake was flat, and the colour of the woods and forests (now just touched with autumn tinting) was breaking in patches into the blue of the lake reflections, with every white tree stem drawn out into wavy perpendiculars. Osorno was repeated with white precision, and another peak (Puntiagudo)—his twin—was competing for prominence in the picture with Osorno, more to the eastward. Behind the lake again was the angry Calbuco, and before it the peaceful giant Tronador. And in it, and about it, permeating the atmosphere and warming the sloping forests, was the clear sweet brightness of an autumn evening sun which touched the snows with pink as it dropped, and sent long blue shadows over the stillness of the waters—shadows which, pivoting on Osorno to the west, gradually streamed upward from the lake. *Todos los Santos!* may all thy saints preserve thee from the pollution of base utility, and keep thee an artistic joy for ever for the teaching of Nature's truths!

In a little wooden hotel at the small port of Puella, on the eastern shore of Lake Todos los Santos, we passed a restful night, after a musical entertainment to which a box in a corner was the chief contributor. An early ride through magnificent forest scenery on a clear bright morning, with just a suspicion of frost in the air, took us to the foot of the great divide—the continental water-parting—which here forms the boundary between Chile and Argentina. Over it wriggles the road which is known at the summit as the Perez Rosalez Pass. It is not a great altitude to surmount. Lake Todos los Santos is about 80 metres (250 feet) above sea level, and the pass is less than 3,000 feet, the drop on the Argentine side to Laguna Frias being between 600 and 700 feet only; but it is not an easy pass. Deep stretches of slippery mud, up to the horses' girths, varied by an occasional patch of half-submerged corduroy or log-paving,

did not form an ideal road, especially at points where it steepened to the likeness of a penthouse roof and the stiff clay slope was almost as slippery as a glacier slide. It was a mere mockery of road engineering ; nevertheless, all credit must be given to the enterprising Argentine firm which keeps it open at all. Eventually it is bound to become an important route, and with the increasing traffic will flow in the increasing means to make it a first-class road. The drop from the pass to Laguna Frias was drier and easier, and I plunged at the bottom almost into the arms of that distinguished geographer, my old friend Dr. Moreno, who had promised ere I left Buenos Aires to meet me here on the 10th April, and was, as usual, rather better than his word. The little Laguna Frias, with its steep walled hills powdered with early snow, and its magnificent forests leaning down to kiss its deep sea-green waters, is surpassingly lovely. Tronador framed it in to the east with a great square sheet of fresh snow drawn across from one rugged peak to another, and the Fitzroy pines stiffly pointing the spur and buttress edges made a little Switzerland of this hollow in the Andes. Moreno with fervid loyalty maintained that never was there a lovelier lake than Frias. I thought of Chilean Osorno, and had visions of the previous evening, and it seemed to me that still the holy saints must bear the palm.

It was a walk of three-quarters of an hour over a corduroy road from the eastern end of Lake Frias to the western horn of the great Lake Nahuel Huapi at Puerto Blest. The walk was not long, but our progress over the corduroy road (well laid and efficient) reminded me greatly of a walk between the metals of a railway, and it was hot and steamy. This, however, was about the last time that we had to complain of too much warmth. We had barely been an hour on the Lake Nahuel Huapi, steaming eastward in the launch, before it was blowing



LAGUNA FRIAS.

[*Don Carlos Bruhl.*]

a gale from the north-west. We landed in the dark (and with some difficulty) at Port San Carlos, and thenceforward for the next six weeks we hardly knew what it meant to be either warm or dry. Lake Nahuel Huapi deserves a chapter to itself to record its many beauties and its varied possibilities as the centre of a much favoured country—a country which is crying aloud for proper forest conservation, and a system of colonisation which will distribute labour and energy in small parcels over its surface, favouring a growth of small estancias (and many of them) rather than large landed proprietors. What is wanted here is people, and the industry and energy and trade which people bring. What is also wanted is a systematic forestry. Here, too, there is not so much valuable timber in the square leagues of forest which hem in portions of the lake that indiscriminate tree-cutting can be permitted without permanent detriment to their value. There can be little doubt about the future of this high road between Chile and Argentina. The beauty of it—the magnificence of its Andine surroundings—will ensure that future when railway extension from the north-east becomes yet a little more extended. The Nahuel Huapi district will develop into a continental “playground”—the Switzerland of South America; but the route itself is never likely to consolidate into a great commercial highway because of the many changes from land to water which occur in the course of it, and because of the difficulties which would be presented by it to any project of trans-Andine railway. There are several other routes across the Andes, both north and south of Nahuel Huapi, which offer quite unusual facilities for trans-continental railway making, without adopting another project which might offer almost as stiff a series of engineering problems for solution as does that of the Uspallata.

There is more yet to be said about this most fascinating

section of the Patagonian Andine region, but at present it is more convenient to hark back again across the Perez Rosalez Pass, and to offer a few more observations on that part of the Central Chilean valley which lie north of Lake Llanquihue—between that lake and Santiago—for it is the least known and perhaps least appreciated part of the republic still open to the enterprise of the pioneer and the colonist. We passed upwards through this forest-covered land enclosed between mountains and sea the following year (1903), when the business of demarcation fell to the Boundary Commission, but it may very fitly take its place in line with the rest of our Chilean experiences. Valdivia, which is practically a German settlement on the coast in about S. Lat. 40, enjoys the reputation of being centrally situated in the most rainy section of this well washed coast. Nevertheless, it was under a perfectly clear sky, and in the brightest of bright weather that we approached the picturesque shores of the province on the 26th February, 1903, in the Chilean cruiser *Chacabuco*, now commanded by our old friend Captain Luis Gomez, who cheerfully reminded us as we said good-bye to him and his ship, that such a state of things was altogether too good to last. It did last, however, for the two or three days which we spent in this most enchanting settlement, and it enabled us to see the best of Chilean coast scenery at its best. The little port of Corral is a sort of lodge in the great gateway of the Valdivia river. It is a sweet little townlet, overlooking the sea from a retired cove of the harbour, buried in the usual tangle of Chilean vegetation. Myrtles, fuchsia, gorse, blackberry, bamboo, laurel and ferns, with dahlias, roses, and the blue-starred periwinkle (all in full bloom) made a sort of bed for the wooden little town, where all the population gathered itself on the wooden little pier, watching the steamers come and go. The river steamer passage to Valdivia from Corral left a

serpentine trail through the mud behind it ; for the river was low, and even light-draught craft had to cast anchor and wait for more water. The straight lines of poplars and the irregular houses overlooking the river from its banks were reminiscent of the Jehlam approaching Srinagar, but the town was not the town of the East. It is a clean, well-ventilated town with fairly wide streets, a good hotel, and a business which makes it one of the



NAHUEL HUAPI.

[*Don Carlos Bruch.*]

chief commercial centres of Chile. Here we were excellently well lodged and fed and treated with all the proverbial and unfailing hospitality which distinguishes South America, from the Atlantic to the Pacific.

Boots and beer are the chief products of Valdivia, but there are other commercial items of importance in the trade statistics of the town ; “charqué,” for instance, which is dried meat prepared in strips of a peculiarly

unappetising appearance, but which is nevertheless largely consumed in all South American States, especially in Brazil. The process of preparation is simple. A heavy roller is passed over the raw meat, which is cut into strips and laid on a wooden floor with furrows to receive the squeezed out juice. It is then left to the natural action of wind and weather to dry. It is extraordinary how popular this variety of jerked meat is to the mass of South American countrymen. To my mind, it is not to be compared to the "biltong" of South Africa, which preserves its flavour far more effectively. The boots of Valdivia are machine made, and it is hardly necessary to add that the machinery for making them is North American. You may purchase a pair of thoroughly serviceable and well turned out miner's boots in Valdivia for four dollars. The beer is of course a speciality. It has been so ever since the first German settlers, in an agony of thirst, demanded of the local chemist that he should brew them beer. Tradition says that he accomplished this feat with the assistance of a wash-hand basin. Anyhow he detected the valuable beer-making properties of Valdivian water, and he lived to make himself a fortune, and Valdivia famous. But the commercial prospects of this busy town were almost of less interest than its situation, for it occupies the most picturesque corner of the most picturesque section of Chilean coast scenery. A morning spent on the river was a morning of enchantment. Banks thickly wooded with laurel, bamboo, ferns, myrtle, and the flowering "ulmo," sloped gently into the rush-lined water and spread back upwards to low hills now burnt into reds and purples, and striped with the white stems of the victims of forest fires. Close under the banks, where the scarlet blossom of the copihué made points of colour amongst the greenery, were the boats of the wood-cutters, and their scattered houses clung to the red hillside. The

wood-cutters themselves were busy loading up with timber cut into lengths for tanning, or else in steering clumsy rafts along the still reaches of the stream. There was none of the wildness or the sombre grandeur of the Patagonian coast about it. It was all new and peaceful, and yet full of life, and seen as we saw it, under the clear sky of a rare Valdivian day, it made one of those "im-



BASALTIC FORMATION.

pressions" which deserve a passing record in this little book.

Valdivia was the scene of a political election whilst we were there. The republic of Chile is full to repletion with politics. Every Chilean is a born politician. All general conversation drifts into politics. Women equally with men (indeed, women especially) take up the advocacy of a political creed with all the energy that is left in them after a due expenditure over household

duties and families. Chilean ladies are good house-keepers (as I have already remarked), and certainly do not neglect their children, even if they occasionally spoil them; but their relaxation—the salt of life to them—is the pursuit of politics. In a country where the climate is kind, where nobody could die of starvation if he tried, and where clothes are only a limited necessity, there is leisure for such pursuits; and in the ranks of the leading lawyers of the country there is prospective gain to be counted on. Consequently, the great mass of the Chilean people are intensely interested in politics. The minority, however, which stands aloof from the strife of the political market includes many of those men who represent the best of the loyalty and patriotism of the country—men who cannot enter into a field of competition conducted on principles of bribery without a loss of self-respect and dignity which they do not care to sustain. Success in electioneering appears to be a matter of expenditure. Votes are bought and sold with no particular regard to the veil which is usually drawn over such proceedings elsewhere, and the price of them is even quoted as matter of financial interest. “Votes are ruling at forty pesos in ——” said one paper that I picked up at Valdivia, “the price appears to us rather high, but there is a good prospect of a farther rise before the close of proceedings.” This may have been privileged sarcasm, but there was plenty of truth at the bottom of it. The result is a plutocratic government, of which it can at least be said, that it is probably much better than that of a democracy.

At Valdivia the electioneering proceedings were carried on with order and comparative quiet. There was no rowdy mob, no bad language, and, apparently, no great excitement. The orators on the plaza during the still hours of the evening, addressed the electors who crowded round for the evening’s promenade, with a fine flow of

Spanish rhetoric which met with little interruption, the few processions which were formed up in the streets being the only demonstrations that excited attention. It was, however, quite impossible to discover who headed the poll. This is frequently a matter requiring most careful investigation. It sometimes happens that both candidates appear at Santiago finally, each claiming that he possesses the record of a majority.

North of Valdivia, as far as the central town of Temuco, there extends through some eighty miles a region of forest country, occupying the whole width of the State from the Cordillera to the sea, which has hitherto intervened as a barrier between Valdivia and the more open and highly-cultivated tracts of the central valley forming the garden of Chile. Through these forests the railway is now being pushed forward which will complete the long meridional line of commercial connection between Santiago and the extreme south. When we passed that way, the line was open for some distance from Valdivia along the Calle Calle river, from which it crosses to San José on the Cruces. There it came to an end, leaving a gap of about forty miles to be negotiated on horseback as far as Petrufquen on the Tolten river. This intervening gap was of extreme interest, because it afforded a sample, as it were, of Southern Chile west of the Cordillera, where the general elevation of the plateau did not admit of the processes of irrigation which have enriched the more northern provinces, and it was a sample which could be studied at leisure. We left on the last day of February, starting northward from the same railway station which books passengers to Osorno southward; and in one of those wonderful old time-worn conveyances which do duty in Chile on temporary lines, we were towed out behind an engine along the river bank. Every now and then the blue river came back to the rail, and glimpses of it were visible through the well-

tangled mass of blackberry, fuchsia, thistles and fox-glove which lined its banks. Where the tall poplars broke through the undergrowth and grouped themselves in fancy attitudes amongst the coihué, roblé, and all the rest of the indigenous trees with Indo-Spanish names and magnificent verdure, there was once again the irresistible reminiscence of Kashmir which so curiously pervades this country.

Visions of a narrow way between the walls of tall forest trees ; of thick knee-deep grass binding the metals, edged with a glorious fringe of yellow lilies ; of a swift current of air caught up by the passing train carrying with it a cloud of shimmery thistledown, shining like silver and dancing along like a troop of butterflies, will always be associated with my recollections of that morning's run over the uneven and unfinished way. The metals came to an end near San José de Mariquina, where, in a quaint wooden hotel within sight of the Villarica snow-cone, and on the edge of the river, we let the hottest hours of the day slide by. The evening's ride through the forest along the grand trunk road of Chile was a useful lesson in the advantages of civilized communications. I suppose there were roads in England like that road some centuries ago. There was, at any rate, nothing to choose between the absolute freedom from restraint with which that Chilean road wandered about the forest glades, independent of direction and grade, and the earliest by-ways through the aboriginal forests of Gondwana in India. The Chilean traveller, too, who met us on the way, booted and spurred with enormous spurs, with his poncho slung over him as if he lived in it, and his wide sombrero flapping over his eyes, was as mediæval as the road he followed. But the farmhouse and the exquisite orchard (unkempt and full of lovely weeds) which hid it, which had existed in these wilds for many a decade, was well built and exceedingly comfortable, and very many

removes in quality above any farmhouse of the same standing in most colonies. Here we were well entertained by the hospitable owner, who shut up his house in the evening and gave it over to conviviality. But he had reckoned without his wife. That lady had been out marketing (which means a long journey to Valdivia) and returned late to find herself locked out of her own home, and a most unusual festivity prevailing in her absence, for which she had no means whatever of accounting. We all heard something of what she thought about it before we left. At the end of the next morning's ride, after inspecting a tunnel on the line (the only one), which is cut through a very remarkable formation of felspathic clay, we again took to temporary rails, and traversed a section of the permanent way which well illustrated the peculiar difficulties of construction with which Chilean engineers have had to deal. It passed over a lengthy "pantano," or swamp; and as the engine crossed the fascine made beds the water squirted up from beneath the down-pressed sleepers and spread over the line. By degrees these beds will consolidate, gradually sinking from year to year and being made good from above, until a solid basis is finally attained which will yield to no ordinary pressure. Breakfasting at the new station of Patrufquen we reached the town of Temuco in the evening.

The interest of this space of Chilean country between Valdivia and Temuco lies in the comparative newness of it. It may be doubted whether ten years ago much more was known about this district than was known about Ultima Esperanza. And yet it is fine country with great possibilities for colonization. At present, beyond a few roadside houses, there is little or no occupation which is not Indian. The Araucanian people, driven southward by immigrants from the north, have always made their last stand here, and have here main-

tained an unbeaten record. The victorious Incas never reached so far south as this, nor did the Spaniards ever carry their great central road into these latitudes. It has been the home of the Indian from prehistoric days, and the Indian has to some extent shown what the value of the land (which now sells at 3s. 6d. per acre) may become. There are clearings here and there where wheat is grown, and where the soil is proved to be rich and strong. There are beautiful glades in the forest where grass undulations stretch in many folds from one wall of trees to another, inviting European colonization. There is water in plenty, although the general level of the plain is inconveniently high for irrigation. Still, here, as elsewhere in Chile, all the important rivers take their rise in Cordillera, or below it, and the question of irrigation is only one of taking off the supply at a great distance from the area to be brought under cultivation. Much of the forest timber is useful, and some of it of exceptional value, whilst it is probable that almost every fruit known to temperate climates would grow here. It can hardly be that the Araucanian will long remain the predominant human element in this part of Chile. At Temuco we had the opportunity of overlooking the central valley from the hills above the town. A red clay formation apparently stretches away from the round shouldered foothills of the Cordillera to the coast line, and through this formation the rivers cut their way to the sea in deep cañons and depressions, leaving broad spaces of cultivated plateau-land between.

Temuco may be regarded as the Araucanian capital. The town is full of Indians, and the streets are gay with the bright shawls of the Indian women and picturesque with the quaint Old World Spanish type of dress affected by the men. Silver ornaments are worn with great effect by both sexes, and some of them exhibit a certain amount

of artistic skill. But the workmanship is rough, and taking the handicraft as a whole it is better adapted for the ornamentation of the bridles and saddles of the Indian horseman than for the arms and neck of his wife. The Araucanian type appeared to me to be most distinctly superior to that of any other Indian tribe that I



AN INDIAN LADY.

met with in South America. Some Araucanians were quite good-looking, and possessed an air which was almost refined when contrasted with the heavy, coarse, and lumbering characteristics of the Tierra del Fuegians, or Pampas Indians. I visited the Indian schools run by

the good sisters of the "Providencia." One of the sisters (quite a young lady) spoke English with as much fluency as she spoke Spanish or Araucanian, and she favoured us with some most interesting information. She made the girls sing so that we might judge of the quality of the Araucanian voice. It was not unlike that of the South African Kaffir, whose voice it must be remembered is singularly sweet, whatever his manners may be. The granddaughter of a well-known Araucanian Cacique possessed all the quiet dignity and something of the beauty of a lady of the Spanish aristocracy. Amongst the Araucanian children were a few very obvious "Pampas," with broad flat faces and squat figures, and a few also of a light-coloured race who occupy a space of country between Temuco and Lanco. There is the usual tradition of shipwreck, and the introduction of white women, to account for their complexion. Out of about 120,000 Araucanian people in this part of Chile, Christians number about 2,000. The difficulty of polygamy (according to my informant) is the great stumbling-block that bars the way to the further spread of Christianity amongst these very ancient and interesting people.

From Temuco to Santiago was a hot and dusty experience of railway travel through the heart of the central valley. Gradually the elevated plains intersected by deep-set rivers, where bridges spanned narrow valleys sunk far below the level of the rails (the Collipulli bridge is 98 metres above the river), gave place to lower altitudes and water-washed plains, where the long rows of poplars indicated the wide network of irrigation, and horses and cattle stood knee-deep in the rich lush grass. Thick hedges of bramble bounded the line, and beyond the hedges stretching to the Cordillera of the Andes on the east, and the Cordillera of the coast on the west, was a dim vision of green cultivation and the refreshing luxuriance

of crops and vegetation. Dimly through the autumn haze the wall of the great Andes could be distinguished, with just a faint gleam of snow here and there when the lowering western sun caught the silver peaks. It was impossible to miss the economic lesson taught by the many rivers, from the Bio-Bio to the Mapucho, which, crossing the land from east to west, present a potential capacity for the provision of motive power in the interests of other material developments than agriculture. If the extraordinary water-power which Chile possesses could be turned to effective use all the railways in the country west of the Andes could be run by it. Manufacturing industries of all kinds could depend upon it. The glacial streams which thunder down the gorges of the Andes at such frequent and regular intervals are bound in the long run to prove a source of wealth to the country as soon as energy and enterprise and capital are prepared to make good use of them.

Because Chile is an old country, and because developments in Chile have been slow, and because the nitrate fields which are such an important source of revenue must, like all other fields, have their limitations and become ultimately exhausted. Chile has been sometimes spoken of by those who have not been west of the Andes as a "played out" country with no great future before her. Such is certainly not the impression which I gathered from a general (but far from complete) look around that remarkable strip of country—all length without breadth. There is a curious admixture of condensed effort and apparent neglect in the general plan of Chilean development—a curious contrast between the centralization at Santiago and the desolation in the south, which must surely strike every traveller as it struck me. Indian occupation has of course barred the way to land im-

provement here as much as on the other side of the Andes. But the Indians are fast disappearing, and the opportunities for the introduction of a capable and virile race of colonists are as great as ever they were. Whether the colonial laws are altogether favourable to this introduction I do not pretend to judge. The law which enacts that all Government land is to be put up for sale by public auction does not always seem to act favourably. The mere price realised is certainly not the only consideration which deserves attention. A class of colonists who bring with them the dominant energy and the intelligence of the best of the Anglo-Saxon races will effect more towards the development of the land, the levelling up morally and socially of the community, and the gradual but sure increase of material prosperity (and, consequently, of wealth to the country) than any number of non-resident speculators who buy land for the purpose of holding it up until prices rise by some agency to which they contribute nothing themselves. At a public auction there must surely be a tendency for the land speculator and the banker, to outbid the farmer and the agriculturist, and the extra price realised immediately by the Government seems hardly to outweigh in value the prospective advantages of the land development under pasture or agriculture.

War, too, has had its effect in retarding development. Although war in the abstract may, from some important points of view, be regarded as the greatest civilizing agency of the world, yet war temporarily and locally disturbs commerce, absorbs men, and upsets the even tenor of political administration. Still Chile cannot be said to have lost anything by her war with Peru, although the material gain in nitrate fields is held by many thoughtful people in Chile to be out-balanced by the depopulation of the mining districts, and the total change

in the quality of the country's administration due to the introduction of a *paying* element in the tenure of official position. The great curse of Chile at present undoubtedly is "politics." In the quiet atmosphere of an English home it is difficult to realise the virulence of the political disease in far-away republics. It prevails all over South America. It is worse than yellow fever in its effect on the material development of a country. A big death-roll, and all the minor inconveniences of perpetual quarantine, may seriously discount the commercial activities of any city which suffers therefrom; but the political disease absolutely upsets the well-being of the whole community, not only locally disturbing the even flow of daily business, but directly leading to those great depressions in the money market which signify a depreciated credit and untold financial loss.

Another barrier in the way of progress from which Chile (in common with Argentina) has suffered has been an unsettled boundary, and the consequent expenditure on ships and regiments, in order to be ready to maintain her claims by force of arms. But this, again, is by no means to be regarded as an unnecessary and unmitigated loss. It would be more than a pity—it would be a great administrative mistake—to lose the value of all which has been learnt of military organisation and of those working principles which should govern military movements in a country so specially situated as Chile, by a neglect of them now that immediate pressure is withdrawn. With regard to the maintenance of her most effective and active little fleet there need be no fear. With her long coast-line and Pacific traffic Chile must have a fleet, even if tradition and recent stirring history did not supply the sentiment that would maintain it. The present glory of Chile is her fleet, and patriotism must indeed be at a low ebb if it will not prompt the means of keeping it. To regard the main-

tenance of a fleet and an army in Chile as a menace to Argentina, or *vice versa*, seems to me (who am no politician) as short-sighted indeed. Two countries growing up side by side with a great history in common, a common language, and rapidly increasing means of inter-communication, should not fear to be strong. An army or a navy at the disposal of an excitable and easily roused republican people may indeed be a very dangerous weapon, especially if it is handy for immediate use, and a blow can be struck almost simultaneously with the utterance of an ill-considered word. But this is not the case between Chile and Argentina. In the first place, contiguous though these countries are, there is between the two something greater even than a "great gulf" fixed. It is impossible to strike a hasty blow across the great solid wall of the Andes—equally impossible to reduce a coast town to dust and ashes readily if the Straits have to be passed before the process can begin. Neither does recent history at all warrant us in the supposition that such a blow is ever likely to be contemplated by those who guide the destinies of these states. The age has passed for ill-considered and violent action. Such action would now be regarded as an anachronism. Indeed, it must be admitted that these southern republics have proved themselves to be a little ahead, if anything, of the enlightenment of their times. They have given to the world an excellent and not at all a superfluous lesson in self-restraint, and in that peculiar quality of wisdom which in the case of individuals we call common sense, by their action in reference to the boundary. Instead of continuing a paper process of shrieking at each other across the Andes, they have loyally and gratefully accepted the Award of King Edward, which (whether it altogether satisfies their aspirations or not) at any rate assures to them a termination of much bitter feeling and commercial depression, and inaugurates a phase of

peace and goodwill supported by financial prosperity. This they have secured at a cost which is probably not one-hundredth part of the cost of a war. It is not in the least likely that the lesson will be forgotten by the countries chiefly concerned, nor need we anticipate in future that military and naval strength will be maintained simply for the ultimate detriment of each other.



THE VALLEY OF LAGUNA TAR, KACHAIK.

CHAPTER XII.

DISPUTED TERRITORY: NAHUEL HUAPI AND THE COLONY
—THE WELSH SETTLEMENTS.

ONE of the most lovely lakes in Patagonia (the Switzerland of South America) is Nahuel Huapi. This (probably) ancient Atlantic inlet, which curves for about 50 miles north-westward across the Andes, reaching out long arms to north and south, enfolding forest-covered islands in its midst, lapping against mountain slopes, clothed with a splendid growth of sub-tropical jungle, or reflecting the scarred and battlemented crests of granite sierra about its northern reaches, is ever dominated by the snow-crowned spirit of Tronador, — The Thunderer, — who sends down avalanches from his peaks to wake up the echoes of the northern cliffs. About its south-eastern extremity are wide spaces of pasture or grass land already colonized, where the wild strawberry carpets the rounded slopes for acre upon acre, and the bush is massed in tangled clumps of berbery and “moillé.” Nahuel Huapi, at its best and in all its summer beauty, adorned with sunlit colour and scented with soft breezes, must be an ideal hunting-ground for the holiday maker. But that was not as we saw it. Deep black clouds enveloped the crests of the northern mountains, and the north-west gale which set in as we crossed the lake from Chile lasted for three full days, sending spray over the side of the foreshore to the garden palings of the little wooden hotel at San Carlos, and streaking the grey waves with white. In

that hotel we were weather-bound for three days, but we seized the opportunity to make all our final preparations for that journey south through the midst of the mountains which was to explain a few geographical facts that we much wished to ascertain. The interior of the hotel was comfortable enough. The long dining room carried a small local museum strung to its papered walls above the five-foot "dado" of stained wood.



LAKE NAHUEL HUAPI.

[*Don Carlos Bruch.*]

There were quaint Indian curios—a ring, a scratched or ornamented pot or two, pipes and skins of many sorts—also an abortive stick shaped like a snail, and a bird's egg that was not shaped like an egg. The drawing-room boasted a carpet, rugs, and paper flowers. Such were some of the accessories of the hotel of the beginning of the twentieth century. Long before the century is half way through there will be lifts and electric lights,

and music at dinner, and a German or Swiss manager to indicate gracefully the number of your room four storeys up. There is also a general store at San Carlos where most things may be got by paying for them, and a small palisaded yard in front where stolid Indians who have ridden in from camp stand hour after hour, saying nothing, doing nothing, and enjoying themselves greatly.

On the 14th April we left San Carlos for the south in the bitterest and coldest squall of rain and hail that we had yet experienced. It was but a sample of what was to follow. Fortunately we drove before it over tufted and boggy grass, which here formed fine grazing land stretching into the mists around, till we reached the Nirehuao stream. There we camped, and there we lit an enormous camp fire and dried ourselves. A starlit night and a sharp frost followed the rain, and then a brilliant day—one of those days which now and then interlude the succession of the Patagonian autumn rains and promise (like the rainbow which is always adorning the Andes) a bright continuous future which never comes. And yet the weather was far from cheerless. There were occasional bursts of brilliant sunshine which gladdened the landscape, shooting long gleams of glory across the autumn-tinted woods, stealing beneath the mountain mists and scattering rainbow tints athwart the dark basaltic peaks, which quite redeemed the weather from the stigma of monotony. No one day was ever quite like the next. The skies above us might have been those of the ideal English April, and the hills and plains below them those of a Canadian autumn. But the occasional north-westerly gales were fierce and strong—strong enough, it seemed to me, to sweep from the face of Patagonia all incipient germs and microbes and disease, leaving a climate which for sweet wholesomeness and life-giving energy is surely unmatched.

The first day out on an extended march is always a fair test of the capacity of one's equipment and the capability of one's assistants. The keen fresh air of the morning of the 15th was altogether too much for the fat and mischievous Argentine mule. He took a great deal of catching and exhibited all his well-known old wiles and tricks to avoid the lasso. Ranging himself alongside a horse he would lay his head so flat against the other's neck that it was necessary to capture both with one throw. Or he would get his head between his forelegs and present nothing but a wildly kicking pair of heels to his old adversary the Gaucho. In the former case he was hauled in with his companion all in one loop—in the latter he was caught by the heels as he kicked. The end was always the same, but it certainly entailed much skilful and hard riding on the part of the Gaucho drivers, who had taken a good day's work out of their sweating and much-spurred mounts before they started on the day's ride. The system of loading and packing and the general treatment of the transport animals is so entirely different in the West from anything that one encounters in the East, that it is difficult to believe that both systems can be equally effective. The loss of an hour or two before the start whilst catching stray horses and mules—the leagues of hard riding that hunting them entails—always seems a great waste of time and energy; and yet no "capataz" of a mob of horses on the march will have it otherwise in South America. He maintains that animals will not graze properly unless absolutely free at night, and he utterly scorns such measures of precaution against straying as knee-haltering or picketing. On the other hand he never carries an ounce of provisions for his cattle. He is independent of gram or corn, or bhusa, or any other of the necessities of transport existence in India. He never puts a blanket on horse

or mule, and it is only occasionally that the animals are shod. When the load is strapped to the mule's back no eccentricities on his part can shift it, it is bound by thongs of hide as tight as a brawny Gaucho can make it. Loss of time in starting is balanced by pace when the cavalcade once moves. No one is on foot. The whole mob goes freely across the open plain, or follows in a self-maintained string over narrow tracks and roadways, making thirty to forty miles a day at six miles per hour for days together. Such rate of progress, however, is not often long continued—even supposing that the number of transport animals is sufficient to ensure a constant change. One day loaded and the next free, is the rule of the road for a self-respecting Argentine mule, and this is about what he is equal to on a pampas grass diet. Ordinarily twenty to twenty-five miles is quite enough for one day's work, which, considering the difference of climate, is not much better than one would expect in India and perhaps hardly equal to rates and distances in Persia. The Persian system of keeping a leading mare (*madrina*) at the head of the mule transport is always adopted. It is marvellously effective both in East and West. It is a mistake to suppose that free riding, without tracks or roads across the open pampas, is conducive to rapid and easy progression. Besides the stiff tufts of coarse grass, there is a pampæan vegetation of a description which is infinitely varied botanically, but all the varied species are remarkably similar in the thorny impenetrable character of a well-tangled and closely-knit structure, and this sort of scrub is most obstructive to riding. Mules and horses alike will take to the narrowest track in the waste of vegetation rather than face it freely. Chilean horses dislike it exceedingly. When, on the other hand, there appears to be a prospect of smooth grass-covered meadow land, with every inducement for a delightful gallop, there

lurks a hidden danger which is more destructive of confidence than even the thorny spikes of the "calafatti," for here almost certainly is the home of the tucu-tucu (the species of tailless rat which is so called from the noise it makes), which is most terribly prevalent through Patagonia. A larger rodent with similar habits (the bizcacha) is still well enough known further north, and has been often referred to by travellers, but it is



SCENERY IN THE MANSO BASIN.

disappearing before civilization. The tucu-tucu, on the other hand, occupies all the best grazing country of the south. The little beast burrows, as a marmot burrows, in a long and intricate network of underground tunnels, undermining the ground to such an extent as to render it absolutely impassable when swamped by rain, and dangerous at any time. Sheep and cattle gradually drive out the tucu-tucu before them. It cannot

survive their trampling, so that the want of solidity in a well-riddled "camp" is no barrier to its practical utility for stock-rearing ultimately; but at present it renders league upon league of country impassable in the neighbourhood of lakes and rivers, and it is perhaps the greatest drawback to free communication which exists. Nor does the tucu-tucu confine himself to low flat lands. He is equally at home on the slopes of the hills, where he is perhaps all the more mischievous from the unexpected situations in which he plants his colonies. I have seen nearly every mule in the string struggling in a swampy piece of "tucu-tucu" whilst crossing the crest of a low divide between hills covered with granite boulders.

Taking full advantage of the bright promise of the 17th April, we crossed from the valley of the Nirehuao to that of the Carrenleufu, passing over a local divide. There was nothing difficult in the gentle ascents and descents of the rolling hills of this outer edge of the Andes, where we dropped gently into the Carrenleufu valley. We might have followed a more direct route from Nahuel Huapi to the Manso basin instead of making the divergence eastward, but for the swamps and morass which we should have encountered in the old lake bottoms of the northern section of it. Over the grassy slopes which rose in gentle undulations to the foot of basaltic crags (where the guanaco roamed at will, and the little grey foxes peeped out from between the yellowing tufts) there was nothing to prevent the engineering of a well-graded road. Crowning the slopes in dense masses and fitting into the contours of the "cañadons" was a forest of beech bush. Sometimes attaining the dimensions of forest growth, sometimes massed in solid thickets—but everywhere touched with autumn's fingers and glowing with brilliant lines of scarlet, purple, and gold. Not even the famous maple woods of Canada

could display more magnificence of colour than these woods of Villegas. Twisting round the scarred shoulder of a broken spur into one of these minor Andine valleys, the blaze of scarlet, sweeping down the curved slopes to a flashing streamlet which was filled with the white froth of a thousand little cascades, would have struck the senses with almost weird intensity, but that it softened and faded gently into the atmospheric blue



RIVER MANSO.

of the far-away hills where the red glory of the foreground was lost in the purple haze of distance. Amongst the knotted stems of the larger growth of beech were to be found the last relics of autumn flowers—a climbing plant with a bright orange flower shaped like a marguerite which hung out its gay petals from amidst the many-coloured foliage to which it clung. We camped in a crimson and golden wood on the banks of a burn,

as red-brown as if it had taken its birth in a Highland bed of heather.

Clouds banked up at night and rain fell heavily in the morning ; but there was no alternative to a day's march if the work we were set to do was to be finished ere winter set in. By easy grades, and through more or less open grass valleys, we went up to the great continental divide—the water parting from which we were to drop into the Manso basin draining to the Pacific ; and where we were to strike that central line of meridional-like depression which extends from Lake Nahuel Huapi to Lake Paz. The actual parting of the oceanic waters was not easily recognisable. A recently departed glacier had left a morainic swamp with a double drainage outlet, and the slopes on either side which bounded the flat expanse gave no indication of a connecting ridge. Picking our way through, we slid gently down a high-level Indian track into one of the most lovely valleys of the South American world—the valley of the Villegas. High above our heads the snow peaks were shrouded in mist, Colorado being only occasionally visible, and the rain-washed path was so steep and slippery that sliding down it was no figure of speech. The valley was still in the full beauty of late autumn. The strawberry leaves beneath the gooseberry and currant bushes were reddening and gently curling with the first frost, but anemones still made a brave show, and patches of river bank were white with “everlastings.” After a little the sun, hot and clear, broke through the mists and lit up the lower slopes of the jagged, snow-patched sierra on either side. At the foot of the steeper spurs of the sierra, flat terraces witnessed to ancient lake beds, and these terraces were carpeted with living carpeting—red and orange, purple and yellow, green and russet, intermixed in all that gay harmony which

ancient artists in Persia knew how to combine so well. Above the bright tints of the sunlit flats were long scarlet streaks of changing beech-bush under the snow lines and the black basaltic cliffs. Finally the most artistic fingers in the world, the fingers of Nature, had softened the whole with a full brushful of atmospheric blue, and the sweet beauty of colouring in terrace and rounded knoll was in no stern contrast to the deep



SOURCE OF THE VILLEGAS.

[*Don Carlos Bruch.*]

shadowed cliffs with their eternal snow cap. Crossing and recrossing the river we came to Vuelta del Toro, lying snug between a long flat-backed moraine and grey granite precipices from which there thundered a milk-white cascade. Next day we ascended the steep and slippery terrace-sides only to descend again amidst rain showers, and continued this process till we crossed the Villegas and struck up a valley to the Corral Foyel.

From a commanding hill on the route a magnificent view was obtained of the great central depression whose history is to be read in the conformation of the hills about it. Originally an inlet of the Atlantic (when the whole Argentine pampas were sea bottom), the gradual upheaval of the land converted it into a lake region long before the latest glacial period set in when an ice cap like that of Greenland spread itself across the continent from sea to sea. Then glaciers filled it and left their mark, and lakes again formed when the glaciers retired—lakes of successive ages with frequent changes of level, leaving terrace after terrace outlined straight and flat against the mountain side. Lakes and morasses, “pantanos” and swamps, were all full enough of water when we were there. Rain set in with persistent vigour, and we were a wet and weary company when we finally slid and ploughed our way through the muddy hill-side tracks to the hospitable camp of one of Moreno’s topographers under the shadow of the Foyel hill. There, under a dull grey sky, whilst the steamy mists drifted slowly up the mountain sides from the sodden valley and the rivulets swelled to torrents, whilst the Villegas river rose behind us under a steady soaking downpour, we remained for several days. Little streamlets trickled about from tent to tent; the whole world seemed turned to bog and morass, and we wondered how our geographical quest would terminate. Should we be shut in for an indefinite period between the impassable Villegas behind and the equally impassable Foyel in front? This, however, was only a preliminary hint to us that winter was coming. On the 21st the barometer rose suddenly, the wind changed, and there was a suspicion of frost at night. Although it did not clear sufficiently to enable us to get the observations we wished from the summit of the Cerro Foyel, it cleared enough to let us out of our swampy camp, and to permit of a day’s

march to the banks of the river. Here again we halted till the river fell almost as suddenly as it rose, and by a skilful disposition of our gauchos in mid-stream with ever-ready lassoes to catch the washed-down mules and baggage, we landed the party safely on the other side, and then and there made a firm resolve never again to place ourselves in such a predicament. No part of



A WET CAMP, NEAR THE FOYEL.

[*Don Carlos Bruch.*]

the Patagonian Andes that we subsequently passed through was more full of geographical interest than the stretch of country between our camp under the Quemado hill (the camp in which we were weather-bound), and the Foyel river. Passing at first over the swampy grass-covered foot-hills of the Foyel mountain, we came suddenly on the corral of an Indian settler who has occupied this corner of the hills for many years, and who

informed us that there was room for 1,000 cattle between his corral and the Foyel river. The cattle were there, in the thick bush of "maiten," berberry, and broom which spread over the strawberry beds and filled up the gorges of the smaller streams—and a wild-looking lot they were. Potatoes, beans and wheat all do well in this part of the Andes, and the long narrow valleys of the Manso and its tributaries are all of them good for cattle-grazing. There is, undoubtedly, land of value beneath the massive walls of Serrucho and Bastiōn, and finer scenery it would be difficult to conceive. From many a point on the rolling line of terraces which we followed, separated from the foot of Foyel by a wide morass, we could trace the course of the Manso depression, and marking the curious irregularity of its flow could speculate as to the geological history of this marvellous Andine conformation. There must once, in the dimmest ages of the world's past existence, have been a strong crystalline axis to the mountain system parallel to the Pacific coast, against which the newer and softer rocks were folded under pressure as the earth's crust contracted. The tectonic contraction may have split or cracked the surface at sharp angles (as we now see them) across the axis, and left the weak lines of resistance which were made use of, partly by the volcanic outbursts which filled them, and partly by ages of water erosion which cut them into deep and wide valleys; possibly even by the tidal action of the sea at a period when all Patagonia was submerged as the western section of it now is. Then there existed a system of straits and inlets south of Nahuel Haupi and throughout the disputed area analogous to those of the south and west. Marine fossils were found during our enforced halt which proved the submergence. As the land rose, vast fresh water lakes were formed, the surface of the country perpetually changing its oro-



NEAR THE FOYEL RIVER.

[*Don Carlos Bruch.*]

graphy, the succession of lake bottoms being marked everywhere by the terraces. Again were the valleys eroded and altered by glaciers during the glacial ages when the great ice cap was spread abroad. Erratic boulders were carried by ice and planted about the country. Moraines were formed; till finally, the scooping and altering glaciers disappeared rapidly, leaving lakes behind them which are now again desiccating, as we see. The effects of glacial action can be studied on any of the great lakes—perhaps with the greatest facility on Lake Viedma in the south. It is a notable fact that the volcanic eruptions which have so changed the orography of Patagonia are post-glacial inasmuch as glacial moraine deposits are found beneath the lava; and pre-glacial where evidence of glacial action is found on the surface of volcanic deposits. Thus there must have been two glacial epochs with an interlude of terrific volcanic cataclysms between.

The break in the rains which enabled us to reach the Foyel river afforded us opportunity for a magnificent overlook of this remarkable country. All around us the snow mantle had been stretched to the foot of the hills. The deep black soil which stretched around us in acres of marsh and fen was hidden in a film of steamy marsh damp as the sun went down; and when the clear white moon took possession of the purple sky, fog rainbows drew their coloured circles, and marsh lights danced across the flats. By morning the whole world of autumn vegetation was tricked out with white frost tracery. Lace-work, such as Nature alone can invent, was drawn over the fields and bushes, and hung in spider-webs from the branches. It was a new wonderland, but it meant little or nothing in the interest of fair weather; for although the river fell to passing point during the break, and we were able to cross with difficulty on the following morning (23rd), the crossing was effected in

a heavy downpour of rain which must have sent the river up again to flood mark in the course of a few hours, and effectually shut off our retreat. The slide down the slippery banks of the deep-sided Foyel was effected with marvellous precision by the mules, who shot into the water, one by one, as if they had been always accustomed to this mode of progression. The climb up the other side (some 300 or 400 feet) was a wet and slippery experience which was rewarded by the view which we obtained from the top, across the valley. A little blue lake lay below guarded by a semicircle of dense cypresses (they are often called cedars in South America) and sweeping down in pretty curves from the edge of the terrace cliff to the foot of the cypresses were the many folding lines of brilliant beech scrub. It was a natural jewel in a setting of gold and scarlet; and the scarlet ran upward in bold curves till it streaked the grey slopes of Serrucho and purpled in the distance under the snow line. The great ridge of Serrucho flanked us all down the valley, scarlet and grey and white, and sent down a splendid cascade of white water and foam at a point where (after scratching our way along many miles of intricate paths through beech wood) we finally pitched our camp. This was at Los Repollos, near the head of the Nuevo Valley. The scenery here was entirely Alpine. Even the cypresses added to the semblance by their imitation of pine growth. At Los Repollos we were enabled to obtain a fair idea of the nature and extent of the Nuevo Valley—a not unimportant feature in the future development of these districts. With a deluge of rain and a curtain of clouds and mist it was difficult to see far, or to secure great precision in detail, and the swamps or ‘pantanos’ of the now sodden valley precluded our following a route with the stream as we had intended. But the Nuevo Valley is obviously a valley with fair possibilities for grazing. The grass

is of the almost universal "stipa" (called locally "coiron"), tufted class, but this is the quality which elsewhere is found so favourable for cattle, and which not unfrequently gives place to the growth of other and still better varieties under the process of cattle-grazing. There are already a few settlements in the valley, whose nationality is mixed and whose antecedents are in some cases doubtful. The settler who owned the estancia



CROSSING THE FOYEL RIVER.

[Don Carlos Bruch.]

near Los Repollos informed me that there was not room for many more farms, and that the valley could not maintain more than 4,000 head of cattle. He bred sheep and horses as well as cattle, and had no difficulty in finding a market, as traders came to the valley to buy. Late on the 24th we started across a fine grassy lake bottom which stretched away to the south; but the grass was treacherous and the little meandering

rivulets that intersected it were but traps for the unwary. Into one of them I fell, and sustained the worst fall that my usually cautious mount ever let me in for. For ten miles or so after passing this band of swamp, the track ran over a sandy bottom with grass and thorny tufts of low growth on all sides—a wide flat plain bordered by mountains—till we reached the river Quemquemtru and found the water in the ford to be deep and rapid. It was not too deep or too rapid, however, for the arrieros and mounted gauchos to line themselves across the river and keep the driven mules with their heads up stream as they floundered across to the far side. Crossing rivers is a much practised art in South America, and it is seldom that any loss is sustained either of cattle or goods in the process. To lassoo a mule drifting in mid-stream and haul him on to the shallows is such an ordinary proceeding that it is a pity the accomplishment should be so local. Like the application of the extraordinary swimming capabilities of the horse to the hauling of heavy ferry-boats (known on the Oxus), it is a useful accomplishment which is unrecognised in civilized cavalry tactics. Rising from the river to the flat top of a terrace 300 feet above it, we were once again on the continental divide, and on the same level as the plains to the north of the river, which has scooped and eroded a deep square-cut channel for itself below the surface of the plain. No further swamps or marshes barred the open way to the Maitén Arroyo. Here the beech woods came to an end. Far up the hillside the red streaks were still visible, but the beech scrub and forest of the plains extended no further east. “Chakai,” a small wiry tree, and broom, took the place of beech; and with wild currants formed the basis of vegetable growth along the banks of the Maitén. Following the river next day we struck an excellent road leading to the settlement of Maitén. We were now east of the

great divide again, and amongst the eastern offshoots of the Andes, forced out of the central depression by the impassable nature of the swamps which filled it. The Maitén river joins the Chubut not far from the Maitén colony. Here I was found by Captain Dickson, who had ridden from Nahuel Huapi in two days by the eastern road (the main line of communication from north to south), on the completion of his examination



MAITÉN, NEAR HEAD OF CHUBUT VALLEY.

[Don Carlos Bruch.]

of the high tableland about the San Francisco pass, and subsequently of the Lacar region. He had lost most of his baggage by the wreck of a steam launch in Lake Perihueico whilst making his way to Lake Lacar from the Chilean side of the Andes ; but he was not depressed thereby. His reception at the Chilean ports and at Copiapo had been most cordial, and his impressions of the hospitality and fascinations of his Chilean enter-

tainers were too deep for words. The experiences of my most energetic assistants, Captains Dickson, Robertson and Thompson, would fill a few chapters with a light and varied assortment of most interesting tales; but their experiences are their own, and they may live to tell their own stories. From a hill near Maitén there was a magnificent view of the open plain to the south closed in by a distant line of snows with the peaks of Leleg overshadowing the plain to the south-east. Leleg marked the continental divide again, which we crossed next day in the midst of the open plain. This was an instructive geographical corner. Viewed from the north, the flatness of the plain appeared unbroken, but from the south the line which carried the divide across the plain appeared as the summit of a line of cliffs, so sudden was the drop from Atlantic into Pacific drainage. For thirty miles or so we galloped over a monotonous succession of flat terraces till overtaken by dark. We camped near a small "puesto" (or shepherd's hut), where there was a most unattractive pond for our water supply. Our marches were not altogether without the attraction of sport. Wild ducks were to be found in most of the lagunes, and the long-necked guanaco stretched his head up above the rising crest of the moraines and laughed his weird laugh at us as we passed, occasionally getting shot for his pains; but there were none of the ostriches (rhea), about this part of the boundary, which figured so largely in the sporting programme further south. Tufted 'snipe' grass and the thorny matted 'partridge eye' covered the many leagues of terrace and plain which formed the grazing grounds south of Maitén.

Leaving the puesto early we crossed some gentle hills which intersect the Cholila plain and dropped softly into the valley of Cholila. There were many settlements (Chilean and Argentine) with large herds



THE PERCEY RIVER DIVIDE.

[*Don Carlos Bruch.*]

of cattle grazing about the wide and fertile valley. The line of the Esquel hills on the east which represent the Continental divide is here low, sloping gently upward to the crest from the Cholila side, but steeply scarped on the eastern, or Argentine, face. Contrary to the usual formation the valley of Cholila appears to be synclinal. It is a promising valley, with fine capabilities for cattle farming, but we saw nothing better than the universal stipa and thorn-filled bush, and the settlements were mostly new. On the west were two magnificent snow peaks, Tres Picos and Puntia Guido, scarred and battered, with storm clouds moving athwart their yellow slopes breaking the sunlight into bright bars and patches of intense colour. From a half-built American farm we had picked up a Welsh boy as our forward guide to the Colony of the 16th October (*"the Colony"* as it is known in Patagonia), and a most efficient guide he proved to be. Later in the day we reached the last water under the divide which separated us from the sources of the Percey and the basin of the Ftaleufu (the river of the Colony), and once again found ourselves in a Patagonian beech wood with the last tints of departing autumn clinging to the curling and frost-bitten leaves.

The morning of the 28th April was a lovely English November morning with light and fleecy clouds flecking the sky, as we followed our guide on his yellow pony up the incline and through the forest tracks to the Percey divide. There was no pass to speak of. The rounded slopes swelled gently upwards, covered with magnificent beech forest—no longer bush—and the glow of scarlet, vermilion, orange and yellow which filled up the foreground, seemed to be reflected in the sandstone cliffs of the hills on either side. Beautiful it was, exceedingly, but the descent from the Percey affluents was about as bad as any we had yet encountered.

Knee deep mud, treacherous pantano, deceptive tucutucu, gave us enough to do to look out for ourselves regardless of surrounding scenery. Finally we were forced out of the valley on to the flanking downs, and a weary succession of up and down climbs over the endless spurs closed the day's amusement. The march would have been impossible but for the luck of an almost rainless day, and the sagacity of our juvenile guide. Matters improved on the following day when we were able to leave the valley and strike across a series of upland terraces past the lovely little lake called Pleiades (covered with duck and black-necked swans) to the edge of the grass downs overlooking the Colony. It was a sweet, soft day again—one of the few that offered uninterrupted enjoyment. On our right (to the west) was the well marked wall of the Rivadavia range, with purple spurs sloping to the Percey, now hidden in a deep cañon. To the left was the square head of Nahuel Pan (appearing to be based on sandstone strata) with a long line of well marked terrace stretching like a plinth below. Far to the south were the snowy peaks of the mountains enclosing Lake Paz, and ever in the foreground the rolling downs of stipa grass and thorn scrub which here grew to gigantic dimensions, forming great round masses of spiky obstruction that no horse could face. It was necessary to ride round it. Chakai jungle and wild currants filled up the cracks.

We had reached the edge of one of the most interesting corners of the Patagonian Andes—the lesser Welsh Colony (offshoot of the larger colony of Chubut) of the 16th October. The first habitation we struck was a fair sample of the whole. A neat little cottage stood in a neat little garden, and there, over the bunches of autumn flowers scattering scent on the soft moist air, was the refreshing sight of clean, lately-washed pink garments fluttering from a clothes line! I had not

seen such a sight through the whole length and breadth of South America. The little farm house seemed to be well built and comfortable. We were welcomed to afternoon tea by the housewife and her good-looking daughter in a room where was a broad open hearth on which an iron tripod was set for the cooking pots. Colored newspaper prints were on the walls, and the



RIVADAVIA RIDGE, FROM THE PERCEY.

[Don Carlos Bruch.]

atmosphere of the place was wholesome, clean and indisputably Welsh. Ten miles out from the Colony we had been met by a mounted deputation of the principal colonists (Joneses, Williamses, and Roberts'), who all talked English as well as Welsh, and who gave us a welcome (which would have been every bit as hearty and sincere had we not come as messengers of peace), with an assurance that their prospering colony

which was a part of the disputed territory, was soon to be assigned to a fixed government, and would obtain all the advantages of a definite and settled land policy. Now, with triumphal arches and decorations and the gathering of the whole Welsh clan, they combined to welcome the first English officers who had visited their settlement. We took up our comfortable quarters at Underwoods farm, which was perhaps the leading estancia in the place—built of red brick with wooden out-houses, neat rail fences, a good peach orchard, and well-kept paddocks. There was a big house party, and a large company sat down daily to dinner, very much after the fashion of a South African farm *ménage* which feeds the passing stranger as well as all farm hands. This was about the only point of resemblance however, for in the general style of the establishment and its well-appointed equipment of carpenter's shop, forge and other farm belongings, it was far beyond any South African farm that I ever saw. All around stretched open grass downs which sloped gently down to the green central flats of the valley, where the pasturage was said to be excellent. Cattle (Durhams and polled Angus) and sheep thrive well, but the distance of the Colony from any civilized centre is a serious drawback that hinders its rapid development as a wool-producing district, such as may be expected when shorter and more accessible routes are opened up to the Pacific coast. The cattle have to be driven some 500 miles north of Lake Nahuel Huapi before they find a convenient pass to Chilean towns, which is the usual market for them. In all other respects the Colony is dependent on Argentina for its support. Its direct connection with the civilized world is by the Chubut valley, where there exists the larger parent Colony of Welsh from which this Colony in the Andes is derived. The good folk of the Andine

Colony had never heard of the secession of the Welsh settlers of Chubut, of their deputation to England, and the results of it. They had no sympathy with such a movement. If not rich and prosperous, they were at least contented. If the locusts (they called them grasshoppers, but they were only the attenuated representatives of a diminishing plague of locusts) would but



VALLEY OF 16TH OCTOBER, NORTHERN UPLAND.

[*Don Carlos Bruch.*]

leave them alone, they would be happy. The Colony includes some 200 or 300 Welsh settlers besides others, amongst whom there are Chilean families. But the main population of the Colony is Welsh. Some of them could not speak English ; but Spanish was necessarily taught in the schools. I visited the school-house, where I saw the cheeriest and cleanest crowd of children that I had seen for a long time. After a good old Welsh

custom I was welcomed by the local bard, but I regret that his inspirations were as much lost on me as an Afghan ode that was once recited in my honour in the wilds of the Indian frontier. There was a general air of contentment about the Colony, if not of great prosperity. There is without doubt much for the farmer to contend with in these Andine foot hills (which are so like the hills of Monmouthshire): his chief difficulty being want of communication with the outside world.

The history of the Welsh Colonies in Patagonia is an interesting illustration of the political causes which lead to such migration, and of the progressive developments which usually attends them in modern times. Some thirty-seven years ago, when the mechanics, artizans and small farmers of the Welsh principality were restless and discontented under the political conditions which then governed their country, a certain number of them sought an asylum elsewhere, where they could live under absolute home rule, preserving their national customs and language, worship according to their own notions, and be absolutely free from taxation.

The movement was a quasi-religious enterprise, and it was based on serious miscalculations. The leaders of it were two ministers, Professor Michael Jones of Bala, and the Rev. Lewis Jones of Festiniog. They did not possess the qualifications of natural leaders of men; they were conservative in their ideas, and they lacked common-sense business instincts. They failed at the very outset to grasp the essential differences between the conditions of life in new countries and in old, and they either lacked the foresight to advise, or the influence to induce, their followers to spread themselves sufficiently far for the purpose of exploring the most likely districts for development. Their experience did not teach them that Patagonia was a country suitable for sheep farming quite as much as for agriculture; but

it must be remembered that the Indian occupation of the country in those times was a serious difficulty in their way.

Intolerance of foreign interference and control was the origin of their emigration from the old country, and the same intolerance is the main cause of that dissatisfaction with their new conditions of life which has found expression lately in their appeal to the English



FARM HOUSE, 16TH OCTOBER VALLEY.

[*Don Carlos Bruch.*]

Government and to the sympathies of the English public.

In 1865 it was only in South America that they could hope to find a country of climatic conditions similar to their own, and in South America the "No man's land" of Patagonia appeared to promise best for the fulfilment of their hopes. Their leaders made some enquiries, and it is stated that they sent people to

reconnoitre the country, but it is clear that the preliminary information gained was misleading, and that great disappointment was felt when the first settlers set their eyes on the unpromising land of their choice. They found what appeared to them to be a barren, desolate country, exposed to severe climatic influences, without a tree, and with no great agricultural promise. To the north was the Rio Negro and the then undeveloped province of Buenos Aires with the richest soil in the world. But though land was cheap they could not afford to buy, and the presence of other people was of itself distasteful to them. To the south there was room in the Falkland Islands, but there also were the English; and they had emigrated to avoid English rule. They chose the best that they could find in the valley of the Chubut with a good port (Port Madryn) in the Golfo Nuevo close at hand.

Into this long narrow valley they crowded, and they immediately found that without excessive labour in irrigation the land was useless for the cultivation of cereals. So they set to work with splendid energy and determination to develop irrigation projects. They held together in small communities, distributed the land in small allotments, and gradually they raised wheat enough not only for home supply, but for export, and Chubut wheat is famous all through Argentina. Thus have they remained in the same place and occupied with the same agricultural pursuits ever since. The early life of the Chubut Colony is a story of terrible hardships. Welsh conservatism, even more than Indian occupation, prevented the exploration of the adjoining districts. They adhered to the valleys, dreading separation and the hated obligation of speaking either English or Spanish. All Patagonia was then open to them—better country lay south on the Atlantic coast, at Santa Cruz, at Gallegos, and in the Magellan territory. These

lands are now occupied. Fortunes have already been made on them, and the settlers of the south regard the Welsh colonists with something akin to contemptuous pity. They had their opportunity and they let it slip. Sturdy, honest and sober, this Patagonian offshoot of Wales as a colony gives us much to admire, not only in the unflagging industry with which they have over-



WELSH CHILDREN, 16TH OCTOBER VALLEY.

[Don Carlos Bruch.]

come adverse conditions, but in the physical development of its members, who in the Patagonian climate have grown into almost typical specimens of Welsh manhood. With singular tenacity of purpose they have plodded along the path they elected to follow. Want of water was the great initial difficulty, but with an extensive (if unscientific) system of irrigation once established, their prospects brightened and Chubut

rapidly became a valuable colony. Just about the time that the Welshmen were beginning to reap the harvest of their patient industry, Patagonia passed definitely into the possession of Argentina. Till then it had been territory of doubtful nationality, although Argentina rather than Chile had fostered its rising colonies. In 1881 Chile definitely recognised the country as Argentine. So far the Welshmen had lived free from taxation and had managed the public business of their little community on strictly home rule principles. Now they found themselves compelled to acknowledge the Argentine Government. There was no one to whom they could appeal but their own forsaken land which they had repudiated—so they signed away their birthright and became Argentine subjects. Chubut became a territory administered by the National Government. Taxes were imposed and Government officials controlled the colony and enforced the laws for compulsory military service in the National Guard, selecting Sunday as the regular day for parade, after the usual custom of the republic. This latter institution was a great offence to the religious-minded Welshman, and it was not the only one. Conflicts of authority were frequent, and agitation against Argentine methods of government naturally followed. Government insisted on the teaching of Spanish in the High Schools. This attempt to assist the younger generation towards earning a living outside the narrow limits of the colony was most unpopular and was regarded as a direct attack on its nationality. The Welshman had emigrated to Patagonia to preserve Welsh from English contamination; they spoke nothing but Welsh; the only periodical published in the colony is in the Welsh language, printed with an old hand machine which is an interesting relic—for it is the identical machine with which the first “Standard” (the oldest newspaper in Buenos Aires)

was printed 43 years ago. But times are changing. There are some sturdy old founders of the colony still left who are unable to speak a word of intelligible English. Their sons, brought up in the old traditions, share to some extent the old antipathies, but they are better educated and more enlightened. They form the present class of men of local importance. The



CAMP IN 16TH OCTOBER VALLEY.

[Don Carlos Bruch.]

grandsons speak English, Spanish and Welsh, and frankly acknowledge that they want all these languages for business purposes. The fathers objected to serve on the National Guard with an occasional slack parade on Sunday; the sons welcome the new and severer law of compulsory service in "the line," for they hope to be called up for training near the wonderful city of Buenos Aires, where perchance they may find a wider

opening for successful life than in the overstocked valley of Chubut.

Under varied conditions such as these the colonists had attained a fair measure of prosperity, and it may safely be presumed that their discontent with the Argentine Government is not greater than that of the many communities established elsewhere under similar conditions. They had become reconciled to their lot, and, were it not for the terrible disasters that have befallen them in recent years, little or nothing would have been heard of their grievances by the world outside. In 1899 the River Chubut, which had been their ally for so many years, turned against them, and the first of the disastrous floods occurred which, during the last four years, have caused the destruction of their irrigation works, the failure of their crops, and the paralysis of industry. After the first flood they appealed for help to the Argentine Government, which generously came to their aid.

A large grant of money was made to assist them in making a fresh start, but in the expenditure of this money they do not seem to have been well advised. They devoted it to the restoration and extension of their existing system of irrigation, instead of to means for the prevention of future floods—a natural mistake, for this was the only flood they had experienced in thirty-four years, and their great difficulty had always been the want of water, not the superfluity of it. That it was a mistake is proved by the recurrence of floods. Only last June (1902) the valley was under water again and no one who surveyed the pitiful scene of desolation from the outskirts of the township of Trelew could fail to sympathise with these unfortunate people.

The narrowness of the river at its mouth seems to be one of the causes of the floods. It appears that some efforts were made by the Argentine Government to

induce the colonists to provide against a recurrence of the visitation by opening out new channels for the overflow. But the want of enterprise and the conservatism of the people are once more apparent in the fact that they declined to avail themselves of the means placed at their disposal. This somewhat extensive piece of work involved the use of "new-fangled" machinery of which they disapproved. They have no engineer among themselves and mistrusted the well-meant advice of the Argentine authorities.

Added to the floods as a natural cause of discontent, is the result of overcrowding. Their farms are generally of 100 hectares (250 acres), sometimes only 50 hectares, and must be considered small in a land where men reckon their estates by the league (9 square miles, or 5,760 acres). Small as they are, all the available land of any value whatever has already been taken up and the people are beginning to feel the want of room for expansion. But still they persist in following agriculture instead of adopting sheep-farming. In 1895 a part of the colony trekked away to the Andes on the west and settled in the "Valley of the 16th of October," and it is enough to say of this section that they are fairly contented, anxious to retain their position, and did not even know of the agitation in Chubut. But still there is not room enough in Chubut.

The late agitation seems to have been organised and led by a medical missionary who was not qualified to practise under Argentine law, but who did, nevertheless, attempt to practise in Chubut, which he had no right to do. Speaking generally, public opinion in the colony is agreed that it includes a great number of those who would, in any colony or under any circumstances, prove to be idle, incompetent, or unsuccessful workmen; some are ex-labourers of the railway from Port Madryn to Trelew, who were promised "farms"

on completion of the work, but found available only the worthless lands near the river-mouth. Some are said to be adventurers who have not sold their allotments in Chubut, but, being possessed of a little capital, have taken advantage of this opportunity to go and reconnoitre lands in Canada, and if they are not to their liking they will return. Others are accused



ZACARIAS, COOK AND FACTOTUM.

[*Don Carlos Bruch.*]

of taking a free passage to Liverpool with no intention of going to Canada.

The movement never had the support and sympathy of the best part of the colony. Nevertheless, when all is said, it would probably be found that could farms be sold, and a scheme for transfer be arranged involving



LAKE FRIAS.

[*Don Carlos Bruch.*

no pecuniary loss, the great majority of the Chubut colonists would welcome a return to the British flag. Their original scheme for maintaining an isolated independence has failed. Having failed, there is half concealed behind their proud reserve the admission that they have made a mistake and that they would gladly rectify it.

But the Welsh, with all their faults (which will be corrected in future generations), are a fine, manly race of colonists, and the Argentine Government, fully recognising their value, and thoroughly appreciating the patient energy with which they have built up their normally flourishing settlements in the Chubut and 16th October valleys, will no doubt endeavour to reconcile them permanently to their position.

As regards nationality, information is too vague to admit of making any definite statement. Of the older people some may have taken the oath of allegiance, others probably have not, and of the younger portion of the community all those born in the country, who would therefore be under thirty-seven years of age, are undoubtedly Argentine subjects.

CHAPTER XIII.

DISPUTED TERRITORY IN THE SOUTH.

THE weather turned dull and grey again during the last two days of our visit to the colony, and the steamy fog which lay in scattered wisps over the moist ground levelled the outlook to a flatness which even the dim outlines of the hills to the west could not relieve from monotony. The occupation of the land appears to have been arranged on rather arbitrary principles. The whole area for colonisation was cut up into square leagues, irrespective of water supply, grass advantages, or indeed of anything but straight lines. Consequently, there were good and bad "claims," and of the latter a good many owners have either disappeared or left representatives in charge who do not effect much towards improving the productive conditions of the colony generally. Some few, on the other hand, have done very well indeed; but all alike were unwilling to encounter the expense of improvements until their title was secure—which it never could be till the boundary was fixed. A league of grass land in the October Colony is good for from 200 to 500 cattle; 200 being quite the least that a man can live and support a family on. The grazing is good, but locusts have done a vast deal of mischief of late years. They have been persistent in their attentions to this desirable district for eight years. The colonists, on the whole, are contented, but they are not

sanguine of making such fortunes by cattle-rearing as would enable them to return to their beloved Welsh hills.

Leaving the interesting little Andine colony behind us, we lost no time in making our way southwards through the mountains, so far as the advanced season and the excessive amount of swampy bog land would admit. The Patagonian Andes seem to have assumed the properties of dry land with a certain amount of reservation. The only way of traversing the heart of this forest-clad region of moist mountain slopes is by means of the narrow valleys which represent the ancient inlets and lakes intersecting and twisting amongst them. In the short dry season the opportunity thus offered to travellers is not ineffective. For mile after mile one may gallop through grassy glades and over gravelly moraine flats without any great difficulty, starting ostriches from their nests and guanaco in thousands from the deep sweet pasturage on the lower hill slopes ; but meeting not a human soul in the day's ride. The curling smoke of a distant fire is a signal that demands instant attention. Somebody must have made that smoke, and the presence of a stranger is significant either of good, or bad, news. Patagonia has not yet emerged from the romantic envelopment which once (and not so long ago) surrounded the prairies of North America with such an atmosphere of entrancing interest for the generation which loved the works of Fenimore Cooper. Many are the legends and intensely interesting the tales of forest tracking and hunting, of Indian encampments and brave deeds done amidst the wild hills overlooked by the glaciers and snow-fields of the southern Andes. I doubt whether any tale of the prairies was ever told that could exceed the thrilling interest (which ever attaches itself to deeds of daring, whether of Red Indian tracker, Australian bushman, or Baluch raider) than that which I heard in a remote little farm of the south.

Ascension Brunel took to the bush because he was wanted for murder. It was commonly believed that he never committed the murder, but that may have been mere sentiment. When a man takes to the jungle it is usually for a good reason. Anyhow Ascension Brunel followed the traditional life of the outlaw all the world over. He was a magnificent horseman, even in this land of horsemen, and his skill with rifle and lasso was



A NEW ARRIVAL.

[*Don Carlos Bruch.*]

quite of the heroic order. He lived as outlaws live, on what he could get—working at honest work when he had the chance of employment such as would leave him free and keep him beyond ken of compatriots or police. He was, indeed, well known within a certain district as a splendid *arriero* and most capable farm hand, but not as Ascension Brunel. For fifteen or sixteen years he held the law at defiance. But with the closing in of

civilised surroundings and the increase of men in the Patagonian wilds, risks of detection became greater and greater, and at last he had literally to live in the bush on such meat as he could stalk or steal. In the Wild South, as in the Wild West, there is doubtless a certain lurking sympathy for a man of the Brunel type, robber and outlaw though he be. But there are some things which the South American will not stand—and horse-stealing is one of them. The deadly earnestness with which the gaucho will hunt down the horse-stealer; the grim determination with which two or three of them will combine to follow the tracks and windings through forest and pampas, and hunt to the death the man who is convicted of stealing or killing horses, is one of the relics of the barbarous age from which Patagonia is now emerging. No quarter is given to the man who perils the lives of his fellow-men by taking from them the one means which may be available for safety in such a wild, wide wilderness as the South American pampas. A stranded man in the open plains, far from water, who has lost his horse, is a lost man. More than that, the system of turning loose and free on the plains any animal that falls out through sickness or weariness from the “tropa,” as the South American farmer makes his way for hundreds of miles across country (knowing that there is the near certainty of picking up that animal again on the return journey), could never be admitted if the life and liberty of every horse was not sacred.

So that when Brunel took to horse stealing, and the killing of mares in the sheer desperation of hunger, an organised party was formed for the purpose of hunting him down. At this time he was somewhere in the north of the Baguales mountains. For long the search was fruitless. He took to the snows, and daily and nightly snow quickly covered up all tracks and effaced every foot-mark. For days and nights the tracking party searched

through the gullies and hillsides which he was known to frequent ; but it is doubtful if they would have succeeded in their quest (at any rate at that time) but for an accidental piece of carelessness on the part of Ascension. On Christmas Eve the tracking party had passed a bitterly cold night in the hills, and the morning broke with a clear sky over a world of mountain and valley where every tree and every shrub was tricked out with a Christmas decoration of clean white snow. To their intense astonishment, clear on the still morning air broke the strains of the old-world Christmas hymn, and there, sure enough, not far above them, under the skin of a freshly killed mare which had been spread over a few bushes by way of shelter, lay Ascension Brunel. After a sound night's sleep and sweet unconsciousness of danger, he welcomed the advent of Christ's birthday in these mountain solitudes as if he had come fresh from an infant school. Truly it was unwise, but who can tell what stirred the heart of this hunted outlaw that he should remember his birthright as a Christian at such a time as that—and give himself straight away thereby ? Creeping softly towards the voice of the hymn, they found him—but not so soon as he detected them. “ Don't shoot,” he cried, “ I surrender,” and forthwith he fired a shot at the party. He would probably have succeeded even then in effecting his escape, but that a boy of the trackers, who was armed with some weird weapon that fired slugs and miscellaneous shot, let off his murderous instrument into the bush at a venture. One shot broke the breech of Ascension's rifle, rendering it useless, and another struck him on the leg, breaking the bone. Not then would he give in. He picked up a bridle and a box of matches, and throwing away his useless rifle, all wounded as he was, he took to the friendly bush. There was no difficulty in tracking him then, but still he went far ; and it was not till the crossing of a

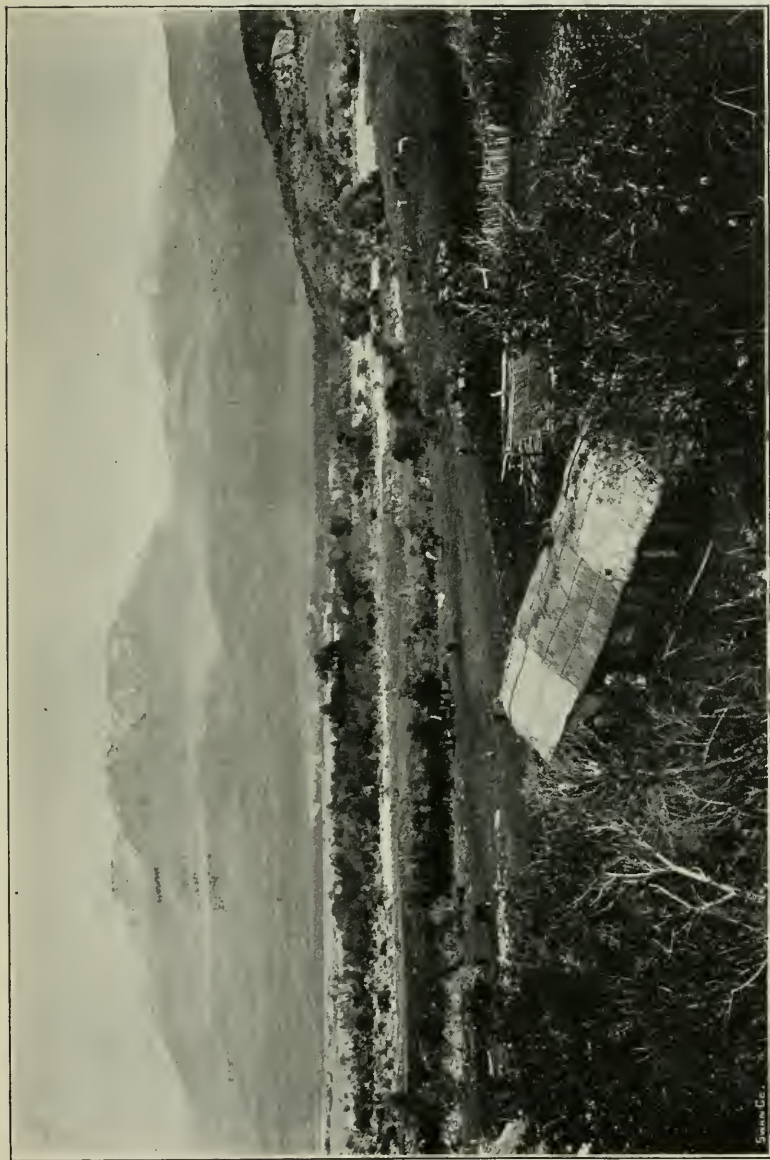
stream absolutely broke him down that he at last lay still and threw up his hands. Ascension Brunel is still (1903), I believe, awaiting his trial, but whether his crimes fall under Argentine or Chilean jurisdiction I cannot tell, and I believe that it is a doubtful question. This is the man who turned absolutely sick when he was first introduced to a vegetable diet after living the life of a wolf so long. His appearance was hardly human (so they said) when they took him. This story (with others) was told me by my German friend von Heinz one wet afternoon, whilst waiting for the weather to clear at his little farm at Palique. A fellow countryman of his, known as "the Baron," had come from the recesses of the Baguales mountains to help in the marking of the wool bales, and he knew the district of Brunel's exploits well. If those two gentlemen would tell the world a little of what they know of the romantic side of Patagonian life, I am sure that the world would be much the richer for as interesting a collection of early colonial tales as ever was told of Australia or the prairies.

The autumn was rapidly closing and all the signs of early winter were about when we crossed the intervening hills between the valley of the 16th October, and that of the Corcovado. The Percey river which we had followed as we travelled southward to the Colony joins the mountain-bred torrent of the Ftaleufu, at the foot of the cordon Situacion, and then works its way westward through close mountain avenues and beds of morass, gathering strength rapidly from glacial streams, till under the name of Yelcho we meet it on the Pacific coast. Along the Yelcho runs one of those Chilean forest roads which I have already described, connecting the coast with the colony, and it is an important road, as it taps a most productive area of the newly awarded claims. Its possibilities as a line of communication from the Pacific have already been referred

to in a previous chapter. It only remained to examine its capabilities at the eastern end, where it issued from the deep forest-clad slopes of Situacion into the valley of the colony. Captain Dickson made his way to the head of it, and followed it as far as was possible westward through the mountains. But at that late season of the year, after heavy rains, this possibility did not extend far, and the road was reported impassable near its head. It could of course readily be made passable; but it can only be utilised as a high road for commerce through all the months of the year after a certain amount of constructive engineering in consolidating those parts of it which deal with swamp. The probability seems to be that considering the nature of the Yelcho port and the shortness of the forest route, it will eventually become an important highway, in supercession of those lines of communication which lie eastward, connecting the colony with the Teka valley, or with Chubut. Although the intervening water-parting between the Ftaleufu basin and that of the Corcovado involved little or no mountaineering, and passed by easy grades over gentle slopes, it was not an easy march. Drenching rain had swamped hills as well as valleys, and the ubiquitous tucutucu had undermined miles of the track, reducing the whole country of lake bottoms to pantano and mud. Nearly the whole line of mules was bogged at one time, and we had finally to seek damp refuge on a comparatively sound hill-top. It was agreed by all the guides that we must once again make an easterly detour, and seek the sounder country which bordered the continental divide; so passing by forest and swamp under granite and basaltic cliffs to the Corcovado valley, we turned our horses' heads to the south-east. The Corcovado is that remarkable river which, draining from the great transverse Lake Paz eastward, curls round to north and west, and finally makes its exit into the Pacific as the

Palena. Nothing that we had seen amongst the central depressions of the Andes much exceeded this valley in beauty, and it undoubtedly struck us all the more forcibly after our struggle through the thick tangle of beech forest and the narrow grass-filled swamps of the intervening divide. We lit upon Day's estancia and forthwith annexed Mr. Day as our guide further south. This estancia was fairly typical of the class of farm which is repeating itself rapidly in these southern regions. The house was built of rough-hewn planks and mud ; the floor was mud and very uneven. A wide open hearth occupied one end of a room which was furnished with a deal table and a few empty boxes. A rickety cupboard stood on one side supported by that curious litter of miscellaneous odds and ends which only accumulate about colonial farms, or in the back yard of a Parsee general dealer's store. Nevertheless, there was an air of homely comfort about the place, and some sacrifices had been made at the shrine of decorative effect and cleanliness. *Illustrated News* prints were on the walls (I wonder if the editor ever thinks of the enormous extent of ugliness in the conditions of far-away colonial life which those prints redeem !) and a clean tablecloth on the table. The breakfast included cheese, strawberry jam, brown bread and butter, and tea, and it was all excellent.

The narrow valley of the Corcovado (further west the Carrenleufu, or Palena) stretched away to the south-east in one long vista of green hills bordering a gentle spread of grassy slopes parted by the rushing stream of the lake-fed river. Sunshine was so rare in these days that a short respite from the everlasting rain was doubly welcome ; the purple cloud-topped hills with deep shadows stealing athwart their endless folds, alone reminded us that the respite was as short as the sun-lit interludes of an English April day. Long strings of cattle grazing, and a scattered mob of horses, dotted the



CORCOVADO VALLEY.

[*Don Carlos Bruch.*]

plain as far as one could see, and presently a mixed herd of both came sweeping by, rounded up by a gay old mare, who, with head and tail aloft, and breathing defiance, brought up the great company to watch us pass. A more promising field for a settler (always remembering the one great drawback of communication) could hardly be conceived than this valley of the Carrenleufu with its Huemules affluent. Not only was there a promise of excellent grazing for cattle, but it was clearly a good field for agricultural experiments. I saw some splendid specimens of wheat and barley which had been grown as an experiment only, for there are no agricultural developments in the valley whatsoever.

On the 5th May we returned to the normal condition of saturation, and in a pouring rain made a detour over the morainic hills, passing *en route* the little Lago Williams, till we again slid gently into the valley of the Corcovado at Vargas. This was a part of the continental divide which required careful examination, so here we halted for a day to make up correspondence, and to ascend a hill near the camp for a good look round. Luckily the weather cleared for the enterprise. The dull flat grey clouds remained dull and flat all day, but they failed to give us the usual drenching. From the summit of a volcanic outcrop near the river we could trace the continental divide through many miles of its course. To the north of us it was carried by the Cordon Caquel, a snow-topped line of hills which terminated to the south-east in a boldly outlined peak called Mount Kuch. Then it dropped into the Pampa Grande, and a series of softly rounded downs of glacial formation marked it to the point where it struck the foot of the low curved ridge of trachyte (new lava) hills, on one point of which we were standing. From here we could see it winding over hills rounded and scratched by the latest ice-cap, till it touched Cotango.

Starting early from our damp camping-ground at Vargas on the 7th, we found ourselves suddenly enveloped in a thick fog which, over such a wide space of featureless flats as we were crossing, was more than embarrassing. Even with the best of guides we could not always identify our position, and we finally lost our way. A cold wind met us in our teeth as we trekked slowly south-eastwards, just a small circle of shadowy figures with a damp grey space of mystery around. Keeping steadily to the compass bearings, however, we eventually struck the Nirehuao stream, where we camped with small comfort and without wood, having crossed once more the great "divide"; but where and when we could not possibly say. It was somewhere on the high veldt behind us. The mist held on next day, but it cleared gradually, till the normal condition of recurrent showers was established. Following the Nirehuao we came across great herds of guanaco; we crossed and re-crossed the divide, but found it exceedingly difficult to recognise its position even with the assistance of the topographers and their maps. Amongst the moraines and "lomas" (probably themselves ancient moraines) that indicate the former existence and mark the strike of glaciers at the head of the Pico and Frias rivers (dividing these rivers from the Atlantic basin), it is probable that from time to time frequent changes in the catchment areas of the local affluents have occurred. The moraines streak the surface of the "mesetas," which here represent the beds of ancient lakes and are disposed more or less in the form of terraces. A lava flow almost invariably overlies the lake formations. The evidence of long continued volcanic action is very marked in this part of the frontier. It must have spread over vast geologic ages (probably through the whole tertiary period), for these overflows are found at all tertiary stages of geologic evolution and they are of enormous lateral extent. From our camp in the

Temenhuaio (it was a good camp, well supplied with wood and water) a magnificent view was obtained of the lake-bed, or flats, leading up to the crest of the pampas from which the gradual eastern slope to the Atlantic commences. Erosion was here well marked, deep-cut cañons being conspicuous features in the landscape. The effects of glacial action were almost equally apparent, for enor-



FIXING A BOUNDARY PILLAR (FRIAS BASIN).

mous boulders of erratic origin were scattered far and wide over the curving outlines of plains and hills.

Amongst the outermost eastern offshoots of the Andes, there is nothing of the grandeur of scenery. The lines of "lomas," which here define the continental water-parting, stood out black and heavy against the low bulging cloudy sky. Nothing could be seen of Andine mountains between Temenhuaio and Omkel. We rode over one flat yellow plain and crossed a low divide, merely

to see another flat yellow plain, with the same scattered tufts of withered grass shimmering in the raw wind, stretching out before us. Cold grey sky, and dull yellow plains; indigo hills (when hills were visible) and a streak or two of russet and gamboge about the edges of cañodons and rivulets—that was all that there was to be seen as we struggled through pantano and tucutucu, starting foxes now and then for the greyhound to catch, or sending the grey ostrich scuttling and skimming over swamp and mud with strides that easily beat the best efforts even of our redoubtable greyhound. Black necked swans (or geese) and ducks swarmed about the pools left by the heavy rainfall, and snipe got up singly in the most surprising way from the midst of the open grass plain. Several members of the party subsided into bogs, or were deceived by the allurements of a harmless-looking stream into an attempt at fording (instead of seeking out the narrowest spot to jump) with evil results. Moisture was already the prevailing feature of our existence—but I do not know that anyone was the worse for it.

On the 10th May I noted in the early morning that we had been already one month out from Nahuel Huapi, and there had only been two really fine days during that month. It rained doubly on the 10th to make up for the omission on those two days. We were still pursuing the *divortium aquarum* around the head of the Frias, and nothing was wanting in the way of practical illustration in order to render it abundantly clear where the parting of the waters was to be found. Nevertheless, we made a long march, and we obtained a really fine view down the Frias valley during a slight lift of the clouds, and satisfied ourselves that there must be wide spaces of very productive grass country within its limits. Throughout a long day's march to the Appeleg river we were on fairly sound ground, passing along terraces bordering the river,

which are here finely marked. Erratic boulders of enormous size were encountered on our way, and the material of which they were composed indicated a varied origin. Nearly all of them were split across, probably by the action of frost ; it was seldom that a single unbroken block was found. Most of these boulders were of granite, indicating fragments of the Cordillera, but



A BOUNDARY PILLAR.

some, which were composed of volcanic mud and scoria intermixed (forming a sort of conglomerate), must have drifted up with icebergs floating northwards from Ultima Esperanza. The continental divide round the head of the Frias, where it leaves the crest of the outermost Andine ridges, follows inferior lines of moraine formation, but the division of the waters is fairly well

marked. Once again it passes up the mountain slopes of the Cumbre Negra, and is carried by a lofty line of Sierra round the western extremity of Lake La Plata (enclosing that lake with its sister Lake Fontana) till it touches the well-known peak of Katerfeld, overlooking the southern shore of Fontana.

At the head of the Frias we stood on the western rim, or edge, of a depression which drained by many small affluents through the Omkel and the Appeleg into the Atlantic basin. Beyond the depression, eastward, were the well-marked ridges of Omkel, the western abutment of the mesetas and table-lands terminating the Pampas. To the north this depression was extended by the valley of the Cherque to the Nirehuao (which we had left behind us), and the Nirehuao again with a long arm stretching northward to the west of the Cerro Tepuel nearly touches the southern branches of the 16th October valley depression. The similarity in general conformation of these old sea and lake bottoms to the straits and inlets of the western coast was very striking, and it was not difficult to conjure up to the imagination the ancient geological landscape in the far-off days which preceded the great ice-cap age, ere the face of nature had been scraped and scratched and altered, and yet another and still more powerful agency had slowly upheaved the central zone of the Patagonian Andes and set all the streams flowing in different directions.

The twin lakes La Plata and Fontana play rather an important part in the economy of Patagonia. It is the overflow of the lakes which causes the sudden flush of the Senguerr river, and it is the overflow of the Senguerr which produces those floods of the Chubut, which have proved so disastrous to the Welsh settlers. These lakes (like Paz and Buenos Aires, and nearly all of the larger lakes of the Southern Andes) extend east and west transversely across the Andine mountains, receiving their

enormous water supplies from thousands of glacial streams. They are but gigantic mountain reservoirs (probably not in themselves sources, or supplied with sub-aqueous springs, but simply the bottoms of the great catchment basins which centre in them), entirely dependent on the meteorological conditions which affect the mountains around them for their own variation in level. Under such circumstances it is not surprising that the uncertain floods which are so constant a feature in most mountain-bred rivers should affect the rivers which these lakes supply in an unusual degree. The surprising feature about the Chubut floods is that for about thirty years (since the first Welsh occupation of the valley) they have never occurred at all. Their subsequent recurrence for two or three years in succession seems to point to a sudden change in the meteorological conditions affecting the Andes about this latitude, for it is impossible that the catchment area of the basin which is represented by the Senguerr system can have altered to any appreciable extent.

On the 12th of May we reached the small settlement of Steinfeld on the Senguerr river—one of several which originally emanated from the La Plata museum, and were due to the practical efforts at establishing colonial settlements in Patagonia of the enterprising director, Dr. Moreno. We rode now over the plains east of the Andes formed by the mesetas and terraces which enclose the head of the Senguerr. Interminable yellow plains, with tufts of stipa grass and occasional bunches of thorny bush, flanked to the west by a low line of shadowy blue hills, and stretching out to the east till flat plain and level grey sky met in the dim haze of distance, or the stiff square edge of another meseta indicated another terraced step in the great procession of the pampas plains—such was the general outlook on this part of the frontier, Rain water stood about in pools on the gravelly soil, and

Katerfeld occasionally showed a white head against the grey canopy that overhung Fontana. Guanaco were very much *en evidence* hereabouts, and the aspect of their long necks stretched above the rising edge of a "loma" with their round heads at the end of them, was rather that of pins on a pincushion. Ostriches, too, were common, and the tracks of the puma were frequent, though we never saw one. It happened now and then in the course of a day's ride (as it happened here) that a skunk was killed. If the skunk could only be dissociated from his overpowering odour, he would be a very pretty and rather interesting little animal. It was almost pathetic to watch him sitting up and begging for his life when escape became impossible, and certainly his extinction was not to be justified by his value when he died. Nobody could touch him—no horse would carry him; and a gentleman of our company whose researches in natural history had led to the acquirement of a mine of most surprising information, had reason to regret the curiosity which led him to kick the lifeless body of the skunk with his only pair of boots on.

A day's halt at Steinfeld was rendered remarkable by the circumstance of a fine day. Fine days were too rare a luxury not to be noted in due form. Here we had by degrees accumulated quite a considerable party of surveyors and engineers, who had joined the head-quarters camp as we passed through successive sections of the disputed territory, ready to give the latest topographical information possible. To all these gentlemen my thanks are due, not only for the information which they so readily supplied about a vast area of mountain and valley which it was impossible should all come under personal inspection, but for the energy with which they made rough places plain, and paved the way to a reconnaissance which was necessarily of the rapidest. A chapter (and a very

instructive chapter) might be written on the very peculiar conditions under which the necessary surveys of this Andine region were carried out, and the extraordinary shifts and expedients that these topographers (well trained in Continental schools) adopted, in order to get work done within reasonable limits of time and expense. One remarkable feature in Patagonian meteorology is the prevalence of violent gales of wind. I have



A LINE OF MARCH.

[*Don Carlos Bruch.*

already referred to it in the extreme south. It is not much modified even as far north as Lake Buenos Aires. In face of an ordinary gale it is found to be quite impossible to set up instruments for observation in any but sheltered positions, and the ordinary gale blows six days in the week. The difficulty which is introduced by the necessity for avoiding hill-tops as stations for observation can very well be conceived by any practical surveyor. If it were not for this, and for the fact that so

large an extent of mountain side is untraversable from bamboo forest, and so much, both of hills and plains, equally untraversable from rat burrowings and morass, Patagonia would be almost an ideal country for the man who works with theodolite and plane-table. The atmosphere is clear, the climate extraordinarily healthy, and the hills and plains dispose themselves in a general line of formation which quite gladdens the heart of an old frontier surveyor. Many were the useful accomplishments of the engineers on both side the Andes, which served to vary the monotony of Patagonian existence and of Patagonian camp fare. A French surveyor made most excellent champagne out of the fruit of the ubiquitous "calafatti." Our Italian friend, Senor Onelli (the amateur naturalist), cooked a dish of puma chops and fungus that would have been welcomed at Frascati's. Horse flesh, of course, is a national dish in Patagonia; and the back of an ostrich, preceded by the lighter attraction of baked "piche" (armadillo), was quite a satisfactory menu for a dinner party.

We were, in fact, a very cheery party, and it was difficult to say, amongst the various nationalities represented in the Chilean and Argentine services and the guides and trackers picked up *en route*, who contributed most to our daily entertainments. But the party had rather overgrown useful limitations, and at Steinfeld we broke up and scattered, so that it was with a more compact and smaller party that we continued our march southwards. The log-built store-house at Steinfeld furnished a useful idea of the class of trade carried on with the Indian hunters who bring in furs and skins for barter. Casks full of American made boots, bags full of flour or bread baked to the consistency of flint (quite impossible to ordinary teeth), iron pegs, harness, ropes, weighing machines, and the everlasting "maté"* on one side;

* Maté is the universal drink of South America—a kind of tea.

with skins of wild cat, guanaco, puma and fox on the other, and over them all the pervading essence of skunk.

The 14th May was bitterly cold when we started by crossing the Senguerr river (barely fordable), and rode south-west over an open yellow plain dotted about with intensely blue pools. Next day, in the teeth of a terrific wind which made it difficult to retain one's seat in the saddle when riding under a poncho, we continued for about thirty miles over the flat meseta country to the Goichel stream, close under the continental divide; which here separates the sources of the Aysen basin on the Chilean side from those of the Senguerr affluents on the Argentine. This was a part of the claim which required attention. The Aysen receives the waters of great affluents comparatively close to the Pacific coast, and these affluents cross the Andes, following great transverse depressions which occupy, in succession to each other, a whole degree of latitude. Within this degree four valleys are to be found with their heads in the continental divide separating them from the Senguerr basin, and their outlets in the main channel of the Aysen. All of them possess a certain amount of pasture land near the central uplands, and all are thickly forest enclosed in their western reaches. The main branch of the Aysen is the River Simpson, which rises on a low divide separating it from the head of the Mayo affluent of the Senguerr. Here there is a small settlement called Koslowski, after the naturalist who has made this remote corner of the Andine foot-hills his home, and here, also, is a wide and useful spread of excellent grass country. From the summit of a loma (a loma is a low ridge of morainic formation, usually steep-sided and flat-topped) above the Goichel stream, we overlooked the sources of the more northern affluents of the Aysen, separated from the Goichel by a depressed watershed, which was sometimes hardly recognisable; but

between Goichel and Koslowski (which we reached later on) the divide at the head of the Mayo is well defined. Across it runs a possible line of transcontinental communication in this part of the Andes, connecting the head of a small affluent of the Mayo with that of the Cohaique, an affluent of the Aysen. The Cohaique route is already a practicable road to the coast (the western end of which we had seen), and Dr. Hans Steffen followed this route to Chile when the Commission party subsequently broke up at Koslowski.

Between the swampy flats about Goichel and Koslowski we encountered a somewhat chilly experience of daily route marching, amidst all the early beginnings of a severe Patagonian winter. At short periodic intervals there occurred somewhere in the broad bosom of the misnamed Pacific one of those depressions which give rise to the westerly currents of wind which have swept during thousands of years against the face of the southern Andes, precipitating vast masses of snow from the seaborne vapours on to the outer ranges, and concentrating into furious gales as they rush through the rifts of the lake regions into the broad pampas beyond. In summer it is said that the frequency and strength of these Pacific gales is usually greatest, but it is certain that during the late autumn, when winter frost stretches out her fingers and touches the outer peaks with white, they are both periodic and frequent. For two or three days the free fierce wind would rage down the slopes and through the gorges of the mountains; and then perchance there was a day or two of peace and even of brilliancy, giving to Patagonian weather all that charm of variety which makes an English spring so doubtfully delightful. Between Steinfeld and Koslowski we experienced all the variety, such as it was, of incessant blasts of winter snow, sleet and rain, varied by occasional bursts of sunshine. I sometimes wondered whether this wild west

wind really had power to clear off those particular microbes, which work their silent and pernicious work to the detriment of human and animal life in Patagonia. Nothing seems to hasten decay there. Whether in the caves of Magellanes, or those of the western coast; on the broad flats of the pampas, or on the slopes of the mountains; there is certainly a tendency to the prolonged existence of organic matter which is very unusual, except under the influence of ice preservation, or of extreme



KOSLOUSKI'S HUT. · [*Don Carlos Bruch.*]

dryness, such as is common to desert regions. Animal carcasses left on the open plains gradually dry up and wither away without undergoing the ordinary offensive processes of decay, and in the caves of the western coast we read of human remains existing like mummies from generation to generation without the embalming preservatives of Egypt. In the caves near the port of Consuelo there have been unearthed the skins and bones of animals belonging to a prehistoric era, so fresh in appearance as

to lead scientists to conjecture that such animals must still exist in the forests of Patagonia. Two features about the biological and meteorological influences which prevail in the extreme south of South America may be noted—but whether those influences affect the question of organic preservation, I must leave to scientists to determine. One is the general absence of insect life beyond the limits of the forest regions, and the other is the prevalence of those strong winds to which I have referred, and which certainly militate against insect existence. With all the irregularities of wind and weather, the constant soaking rains and the perpetual exposure thereto, it is certain that sickness was almost unknown amongst the numerous party which one way or another was employed in searching out the boundary. There was not a single medical adviser in the field, nor was one ever wanted—a truly astonishing condition of camp life as viewed by those who have worked in Asiatic fields.

Wading through morass and swamp, struggling across rivers, and picking our way along the sound but narrow tracks which the hill-sides afforded during this swampy season of the year, we finally emerged into the rolling grass country about the head of the Simpson at Koslowski. Originally a Polish settlement, Koslowski had subsided into an embryo telegraph station of the frontier (the telegraph was yet a hundred miles away from it), and a sort of *dépôt* for the researches of a Polish naturalist, who, like so many of the original frontier settlers, had started from the La Plata Museum. The Polish emigrants who had sought refuge here some years before were but poor colonists. They had learnt nothing of the science of agriculture, and knew not how to support life in a new country. They failed to support it, and were literally starved out of the settlement. After the departure of the remnant that survived a season or two of starvation, it was found advisable to burn down their huts in order

to subject certain minor settlements of insect life, which had accompanied the Polish emigrants, to the refreshing vigour of wind and storm. Of the Polish colony nothing remained except Koslowski's depôt, and two girls who had sought refuge with a Frenchman on the Mayo. Koslowski was an Argentine settlement which had failed. But it need not fail again. There is every possibility for



A WAYSIDE FARM.

settlers of the right stamp such as many whom we met (Welshmen, Englishmen, Scotchmen and Germans) to make a good thing out of the widespread grass uplands which stretch in gentle undulations between the feet of the mountains.

So far we had examined the dividing line of the waters between Pacific and Atlantic almost mile by mile, noting the strong lines of rugged Sierra which represented the divide through so great a part of its

course, and following here and there those doubtful sections of it where there were no mountains and it wandered on uncertain lines through the moraines, the morasses and swamps amidst those Andine foot-hills which intersect the ancient glacial formations of the mountain borderland. No part of it is really more difficult to distinguish than certain spaces between Steinfeld and Koslowski, but it was just here that the interior of the disputed territory was most unsuited to a mountain boundary. It is effectually partitioned into transverse spaces of ridge and furrow, of mountain and valley, across which a central meridional boundary would have climbed up and down, here lost in the forests that covered the undistinguishable spurs of a transverse ridge, there dividing good pasture land as it crossed the open flats, and everywhere subject to violent changes from one topographical feature to the next. The Argentine alternative was a line crossing the united affluents of the Aysen within measurable distance of the Pacific coast, following mountain features which were themselves more or less uncertain as to conformation. Indifferent as the continental divide undoubtedly is (if regarded as the basis of a good topographical boundary throughout this section), it is the best that nature affords, and indeed the only practicable natural one which does not too closely overlook the shores of the Pacific.

At Koslowski our geographical reconnaissance (which had been all too rapid for detailed topographical investigation and close local enquiry, but not too rapid for the investigation of those general conditions which really formed the subject matter of the boundary dispute) came to an end. The snow had been falling silently, at intervals, for some days—but the intervals when it ceased had been long enough to admit of its disappearance before the next fall. Now, however, the bulging black clouds which overhung Ap Ywan on our northern flank, and the long

line of cloud-enfolded hills beyond, were symptoms of more determined action on the part of winter, and signs of trouble if we did not hasten our departure to the coast. Messengers sped out to find the southern party which, under the leadership of Captain Robertson, had slowly reconnoitred from the southward to a junction with us. We had previously heard that it would not be before the 7th or 8th of June that the southern party could hope to reach the eastern end of Lake Buenos Aires, a little to our south; and a fortnight's delay (it was now late in May) seemed probable.

In a comparatively dry log-house at Koslowski (which had been built by Koslowski himself, and was now being appropriated rather prematurely as a telegraph station) I found fairly comfortable quarters for a few days while closing up the commission business and establishing direct communication with Captain Robertson. Meanwhile there drifted in a detachment of Welsh colonists who were employed on telegraph construction work, and who camped just outside my quarters. They were a hardy, cheerful and capable set of men from Chubut. Some of them had flourished exceedingly under Argentine auspices, and professed themselves to be in no sort of hurry to leave the land of their adoption. It was pleasant at night to hear them singing Welsh songs by the camp-fire after a long damp day in the field. The voices were good, and part songs were excellently well done. As I am recording "impressions" here, let me remark that the impression left on my mind by these cheery colonists was that the Welshman of Patagonia is a far finer specimen of humanity, physically, than the Welshman of Wales. Along with the Welshmen were Argentines of so many nationalities that in a party of twelve who collected outside the door of my quarters on the morning of our departure, Captain Dickson counted representatives of no less than eleven different countries.

My warnings as to the probable result of too long a delay in these Andine valleys at this time of the year were productive of some effect. Captain Robertson curtailed his last excursion westwards into the heart of the Andes, and made arrangements to concentrate his party at Perihaiken (near Lake Buenos Aires) before the end of the month. As soon as I was assured that he and Captain Thompson (who was with him) would have no difficulty in carrying out their revised programme, I broke up the head-quarters camp.

Dr. Hans Steffen, who had been with me throughout the journey from the start from Valparaíso southwards to the termination of our reconnaissance by land, here took his leave and started for the Cohaique pass leading to the newly constructed Aysen road and the Pacific coast. He experienced some difficulty in crossing the pass owing to the increasing snow, and his subsequent journey down the Aysen was not an experience which the most enterprising traveller would much care to repeat. But he eventually (after more vicissitudes than I can repeat here) reached Santiago safely. His practical knowledge of the Pacific coast and of the ways from the coast into the interior, gained whilst exploring that country in the interests of the Chilean claim, is probably unrivalled; and his capacity for securing the services of exactly the right people to give the latest detailed information on essential particulars, was invaluable. He was commissariat and transport officer combined whilst in Chilean territory, besides being guide and scientific adviser to the expedition, so that he had his hands pretty full. Certainly the Chilean Government could have found no more earnest and capable advocate than this distinguished German professor (for Dr. Steffen is not, I believe, a naturalised Chilean), and my memory of an expedition which was so fraught with interest to me personally will always pleasantly recall the grave and courteous

assistance rendered by this great explorer and geographer.

The Argentine expert, Dr. Moreno, of course remained with the camp. It would have been difficult indeed to reach the Atlantic coast without his assistance. Captain Dickson and Lieutenant Holdich were also with me. The latter had narrowly escaped sustaining severe damage from an accident. His horse subsided into a morass, and, recovering itself, set to work to kick his prostrate rider who was unable to get free. This was an unusual proceeding on the part of an Argentine horse, and the consequences might have been serious. As it was, a severe kick on the knee was the worst result, and had it not been for a light species of waggonette which was added to our transport near Steinfeld, there might have been some difficulty in providing a suitable ambulance till Lieutenant Holdich was able to ride again. This was practically the only accident which happened during three months of travel, so far as my party was concerned. Captain Robertson's command, however, did not fare quite so well.

On the 25th May (Argentine Independence Day) we turned our faces westward to take the shortest course we could to the Atlantic coast. It was snowing heavily—all the world was white; and the thick steady soft fall (which soon reduced us to a silent band of pilgrims following each other's tracks closely) was thick enough to hide the leaders of the party at a few yards' distance, and to obliterate their tracks in a few seconds. What the scenery may have been like during that first half-day's march, I do not know; but by evening we were still all together, the sky had cleared for a bit, and we found a most excellent camp with abundance of wood and water near an Indian corral in the valley of the Nirehuao. Nirehuao, it may be remarked, is a generic name which applies to all valleys in which the Niré bush is to be found.

It was with real regret that I turned my back to the Andes and faced the east once more. I had seen so much, and yet there was so much to see. Moreover, not far from the Koslowski rendezvous, was one of the great geographical curiosities of Patagonia; one which had a certain bearing on the boundary contention, and at the same time offered a geographical problem which I believe to be unique. But delay was too risky a venture, and the problem fell within the scope of Captain Robertson's investigations rather than mine. The great lake, Buenos Aires (greatest of all the Patagonian lakes), curves itself across the mountain system from the mesetas of Argentina to the foot of the westernmost Cordillera. Like other lakes it is probably not itself the source of the great rivers which flow from it to the Pacific. It absorbs the glacial streams from the north, and pours them out again through its south-west extremity into the Baker, and through the depression which that river follows, to the Pacific. One of its principal feeders is a mighty glacier which underlies the crest of Ap Ywan immediately north of it. From this glacier a liberal ice-fed stream pours forth, but it does not make its way direct to the lake south of it. The topographical conformation of foot hills and moraines forces it to the south-east, where apparently it is destined to miss the Lake (and where certainly it did once miss it), and to pursue its busy way at a higher level than the Lake, as an affluent of the ancient river Deseado, to the Atlantic. It must have been, indeed, not so very long ago the principal affluent of the Deseado, and the change in its course induced by recent glacial action on the formation of moraines may be one of the reasons why the Deseado is now a river of the past. For this glacial feeder of the Buenos Aires (called the river Fenix) suddenly changes its course when level in latitude with the eastern extremity of the lake, and

instead of speeding eastward to the Atlantic, makes a sudden and extraordinarily sharp bend to the west (from south-east), and now empties itself into the lake. So small and insignificant were those morainic formations which effected this remarkable change that a few days' work with one or two good workmen enabled Dr. Moreno to bring the river back to its old channel and to re-establish its Atlantic connection. This action has produced a curious anomaly—the river still divides its attention between the two systems (Atlantic and Pacific), flowing partly to the lake, and partly in a slow and sluggish stream eastward. There are many instances which may be quoted of a glacial stream dividing and becoming the source of two opposite drainage systems locally (the source of the Oxus, for instance), but the division of the waters usually takes place near the foot of the glacier, and not after the glacial affluent has run a long course as a fully developed river. Here, for 30 miles from the foot of the Ap Ywan glacier to the point of division of the river, a well marked and rapid stream actually forms in itself the continental water-parting—an illustration of the *divortium aquarum*, which is certainly curious, and, in its way, probably unique. It is, at any rate, not a feature which could possibly have been contemplated by any treaty makers.

Before bidding a final adieu to the wild borderland in which centred the most vigorously sustained and well contested boundary dispute of the century, there is a word or two to be said about the wildest tracts of all, *i.e.*, those which extend southwards from Lake Buenos Aires to the great transverse depression of San Martin, explored by Captain Robertson. Here is a land of high, flat, wind-swept and gravel-covered table land, intersected by rough lines of lofty sierra dominated by grand mountain peaks; a district flanked on the west

by eternal snow fields and gigantic glaciers, broken by lakes set deep amongst the rocky crags of the hills; of rushing unfordable rivers—a broken wilderness containing all the grandest effects of long eras of volcanic and glacial action. Yet into this wilderness there extends something of the richness of the Magellanes pasturage further south. There are long, though narrow, valleys filled with abundance of excellent pasturage, and amongst these mountain lakes and streams there is a limited extent of opportunity for settlements which could develop cattle breeding to advantage. The full force of the terrific winds which sweep the highlands clean, and raise water in solid mass from the surface of the lakes, is only felt on these highlands and lakes. There is shelter in the valleys, and plenty of warmth during the season of summer sun. There would be (and there will be) settlements in these districts as soon as communication with the outside world is a little more assured. At present it is an almost inaccessible part of the frontier. The ways into it which have been engineered from the Pacific side can hardly be considered yet as commercial high roads; the ports and harbours are not good enough for any extensive development, and the conveyance of cattle by sea route to the markets of Chile must always be an expensive process. But roads from the Argentine side will certainly develop, and with them there will come the beginnings of occupation, if indeed occupation is not already assured. Communications north and south are good enough—north to Steinfeld and Nahuel Huapi, southward to the Ultima Esperanza ports. But it will be many years yet ere this, the wildest and most inaccessible part of the Patagonian Andine region, will ever be thoroughly explored, and there are many more accessible and more promising regions yet awaiting Colonial enterprise on both sides the boundary.

It is not surprising that in the process of the geographical examination of these southern mountains considerable difficulty and some hardships were experienced. Often wide detours out into the open country were



TEHUELCHÉ INDIAN.

[*Don Carlos Bruch.*]

necessitated by the impracticable nature of the interior routes. Weeks were occupied in making a forward progress which elsewhere would have been measured by days, if not by hours. Captain Robertson's little

party were sometimes reduced to hunting for their food supply, and found their rifles and dogs extremely useful. The one stag of Patagonia, the huemul, is still abundant in these untrodden fields, and as he has found his way down to the forests of the coast, there is fairly clear evidence of the existence of low passes dividing the snow-fields of the Western Cordillera at points which are as yet unexplored. Guanaco are everywhere abundant ; but it was the rhea (or so-called ostrich) which proved the most useful, if not the most palatable resource for the larder. English officers are not expert with the "boleador," the universal and immemorial weapon of the Indian and the Gaucho—the deadly and oft-described triangular arrangement of three balls at the end of a triplet of cords which twists and winds itself around the legs or neck of the hunted animal, and cripples if it does not strangle—but they had good dogs of a powerful breed akin to the greyhound, and they ran down the rhea with them.

Indian settlements are now widely scattered throughout the South. It was only here and there that Dr. Moreno fell in with old friends, the representatives of the old Tehuelche tribes that once made these happy hunting grounds their own. They are settlers now, owning reservations, and often possessed of a considerable head of cattle, and they are still invaluable guides through the great pampas wastes. By day or night, through snow or sunshine, they seem equally able to take the shortest track to any unmarked spot in the wilderness, whether it is a recognised camping ground or not, an instinct which they share with so many wild animals that one wonders sometimes whether the ordinary impulse of reason has anything to do with it. There is plenty of room for them still. They are by no means shouldered out of existence by superior and more civilised races in this part of South America.

Their disappearance throughout these southern regions (and the reduction in numbers is easily measurable from year to year) seems to be due to natural causes. They drink, no doubt, when they get the chance, but it is a popular delusion to suppose that periodic orgies occurring at comparatively long intervals have much effect in reducing their numbers.

With their disappearance it is probable that there



CROSSING THE PAMPAS IN JUNE.

[*Don Carlos Bruch.*]

has been an increase of game in Patagonia. To the vast herds of guanaco and thousands of rhea which now roam about the grass country at the foot of the hills or the edges of the forest, there is now to be added the "baguales," or wild cattle, derived from stock which was originally imported. They are exceedingly wild, and it was but rarely that the sportsmen of our party sighted them. The Baguales Mountains were

once their home, but it is doubtful whether there are many there now. They appear to have migrated northwards.

The night of the 25th May, following our march to the Nirehuao stream, was clear and intensely cold. After dragging our stiff and frozen tents off the ground next morning, and packing them like planks on the mules, we skirted the swamps of the Laguna Blanca and slushed along through half-frozen bog and over rotten hills to the harder surface of the meseta. Little deep blue lagoons flanked our line of march with foam washed up into ice curves at the leeward ends of them. The following night and day we were favoured with one of the periodical gales of Patagonia, but the ground offered firmer foothold as we trekked east, the snow diminished, and we reached a fairly sheltered position on the Genguel river. Two more marches with a stiff gale of extremely cold wind blowing us steadily eastward, put us on to the old Tilly road for wool carts, when we had to change direction to the east in order to avoid the inundations caused by the Senguerr overflow above Lakes Colhuapi and Musters. This prevented us from visiting the Colhuapi Colony.

It is not to be supposed that because we were now on the pampas plains and following (where we could) recognised roads, that the marching was easy and rapid. The Senguerr pampa is composed of soft clay and sand with pebbles overlying. Tufts of short yellow grass, varied with a silvery low growing scrub and an occasional bright green splash of some hardy vegetation of umbelliferous growth, turned the landscape all grey, black, and yellow, spotted with ice pools, and reaching into infinite space but for the low-flat blue line of meseta edges on the horizon. This conformation tends to lumpiness. There is no flat ground anywhere of sufficient extent to be covered by a tablecloth,

and the long line of shivering, tired mules stuck vigorously to any vestige of a wheel track that this "high road" might retain. But we were steadily blown in the right direction. The night of the 30th was again intensely cold (unfortunately we had no minimum register), and it was effective in rendering the ground hard and consistent. We marched quickly, and reached the great bend of the Senguerr river com-



PATAGONIAN INDIANS. [Don Carlos Bruch.

fortably. Here we heard of a large Indian hunting expedition assembling (300 men and 1,200 animals), but we saw nothing of it.

Any half hour of leisure time waiting for the mules' arrival in camp was generally occupied in the search for ancient Indian arrowheads made of basalt, petrified wood, and obsidian. They were to be found in numbers about the site of any old Indian encampment, but the

facility with which our invaluable photographic artist, Don Carlos Bruch, could manufacture them with a bit of bottle glass or a mutton bone, rather damaged our estimate of the value of these "antiquities."

On the 31st we obtained some carts from the Colhuapi settlement which greatly relieved the mules and assisted our progress. Here we noted a general change in the scenery. We were now about 100 miles from the coast. The trees were bigger and the grass more frequent and of a better sort. Here too we enjoyed the opportunity of making personal acquaintance with a few representative Tehuelches. They were well-built men (but not giants), with a frank pleasant expression on their broad, smooth faces, and to my unscientific eye they might easily have been brothers, or cousins, of any other South American Indians that I have met. These people wore the ordinary hat of South America, and guanaco skin ponchos with the hair inside and highly ornamental archaic red and blue patterns outside; and they took about with them a secretary as interpreter. Like all Indians, their great fear was being turned off their hunting grounds. They wanted a "reservation."

We woke up on June 1st to find deep snow piled round, with plenty more to follow; but the wind had lulled, and after Don Carlos had secured his photographic record of our Indian friends, we started for the day's march, putting six horses to each of the carts, and five to the waggonette, which, now that wheel tracks were fairly well marked, became a comparatively comfortable conveyance. After twelve miles of slow dragging through the snow with a steady fall continuing, we utterly lost our way. Wheel tracks and other tracks became absolutely obliterated, and for once our guides failed. We had to camp on our tracks where wood was obtainable. Once again (as so often happened)

it cleared a little at eventide, and the magnificence of the sky effects charmed the weariness out of our souls. With varied tints of faint blue, opal and yellow the



INDIAN GUIDES.

[*Don Carlos Bruch.*

heavens arched above the dead cold earth—long, black streamers streaking the faint horizon with a promise of further snow fall on the morrow. Sure enough the morrow fulfilled the promise, but the great burden of it

had descended during the night, and it was only a thin and filmy fall that greeted us when we turned out all standing from our half-buried tents. By day light we had little difficulty in recovering our bearings, and with a brilliant sunshine gradually lighting the whole white world, we trekked rapidly to Cerro Negro (courteously named "Holdich" station since then), where we struck the telegraph, here making slow advance to Colhuapi and the west. And the first message which greeted us was, "Peace signed with South Africa to-day." It was a lucky omen, and I accepted it gratefully; for lucky omens are sufficiently rare to be worth appreciation, and I felt grateful indeed for the consideration and the courtesy which then (and for the rest of the journey) placed at my disposal the means of acquiring the latest news in the heart of Patagonia as it reached Buenos Aires day by day. It was one of many tokens of sympathy with the object of my exertions which I received, not only from the Governments of the two states chiefly concerned, but from private firms and individuals throughout South America. That evening I was in possession of the full text of the Treaty terms as they appeared in the London papers of the day, and at the same time I received the news (equally satisfactory to me personally) of the agreement signed between Chile and Argentina respecting disarmament. For although I have always experienced some reservation of opinion as to the advantages to be gained by the breaking up of a well-considered and well-organised military or naval national equipment, I had no doubt about the value of the international agreement. We rested on the 3rd. It was a bright day of sunshine, but cold (18 degrees of frost), followed by a new gale of wind at night and a change of temperature. Following down a depression eastwards (probably an old outlet of Lake Musters)

we encountered a landscape of black basaltic masses cropping up amongst sedentary strata, with occasional small volcanic cones. Blown along by a high west wind, we made fair progress on the 4th, which we continued in the customary snow-storm on the 5th, when it gradually cleared under a weird green sky with lowering snow-clouds. That night was rather bitter. We camped in the Castello Canadon in the dark, after



EARLY WINTER, CROSSING THE PAMPAS.

[*Don Carlos Bruch.*]

much groping about and much difficulty in finding it. The cold was intense, and the westerly gale drove pellets of hard snow through the ice tunnels formed on the surface, as if they had been hardened shot. It was with difficulty that we dragged our baggage and traps out of the deadly cold embrace of those Castello slopes in the morning. It was snowing again, but the 6th June gradually resolved itself into a squally, but fairly fine day. We made a long day's march and camped

with wood and water about us. We had come to our last bottle of wine, our last tin of milk, and the end of our tea. The admirable management which guided our commissariat arrangements may be estimated by the fact that next day we reached the coast at Comodoro Rivadavia. In a final gale of snow-cold wind we were blown round the slopes of a terraced hill at the end of a day's march on the 7th, to see below us the wide stretch of the blue Atlantic, and the cruiser *Buenos Aires* and transport *Guardia Nacional* awaiting us at anchor.

The hills and lomas of the coast provided a certain amount of shelter from the westerly gales, and as the wind dropped towards evening we lost no time in embarking on the cruiser. There the hospitable welcome of that well-known Argentine sailor, Captain Nunez, awaited us. A more charming and a better informed guide and adviser on matters Argentine it would be difficult to find anywhere. His perfect knowledge of the English language is a recommendation which (perhaps we may flatter ourselves) has assisted his great scientific attainments to place him in the position of Director-General of Ordnance. It was all to our advantage that in June, 1902, he was captain of the smartest cruiser of the Argentine Navy—the *Buenos Aires*.

We were fortunate in our embarkation. It is not always that landing or embarkation on the Atlantic coast is possible in the winter months along the open seaboard of the Gulf of St. George. Captain Robertson's party were not so fortunate. Although they were but four or five days behind us, they encountered much greater difficulties from the depth of snow and the wildness of the winter weather than we had done. Snow rapidly extended across the whole width of the continent, and a few days later would have rendered

travelling impossible. One of Captain Robertson's Chilean guides (a young Englishman who had settled in the South) did indeed attempt with some of his comrades to get back again from the coast to the neighbourhood of Lake Buenos Aires. He failed utterly. He was shut up by snow in a narrow encampment for weeks, and after seriously reducing his means of trans-



BOUNDARY MARKING, LAKE SAN MARTIN.

port by killing his horses for food, he narrowly escaped starvation. The embarkation of Captain Robertson's party on board the *Guardia Nacional* also nearly proved disastrous. The boat which carried himself, Captain Thompson, and other members of the Commission, was capsized alongside the ship, and the occupants were rescued with difficulty by the gallant efforts of the engineer of the steam launch which luckily accompanied

them. A certain amount of valuable mapping (but no lives) was lost. It is doubtful, however, whether one of the best of the Argentine topographers, Senor Bulgaréli, ever recovered from the effects of that immersion, and the subsequent injuries sustained whilst being hauled on board. He was very ill for months afterwards, and finally died when on duty with Captain Dickson in the autumn of 1903.

CHAPTER XIV.

RESULTS OF THE AWARD.

THERE is not much more to tell of the Arbitration Commissions. The voyage northward in the spring of 1902 in the Argentine cruiser *Buenos Aires*, after the wintry experiences of the journey across the Continent, was a welcome change from the cold icy blasts of the pampas to the comforts of a well-appointed ship, and the advantages of close intercourse with her commander. We visited the port of Madryn, and from there we were able to see for ourselves the devastating results of the floods in the valley of Chubut. I was informed by one of the original founders of the Colony, who had himself been ruined by these floods, that the once flourishing trade in wheat and wool had been reduced to one half, and that the valley could no longer support the full strength of the Colony. He, however, denied (as has been explained elsewhere) that the agitation for relief from Argentine rule was generally supported by the colonists, although they now all recognised the necessity for widening their borders, and were desirous of certain administrative reforms. He estimates the number of those who left the colony at about 250. A curious tone of resignation (almost of indifference) to their losses was very perceptible amongst them—due largely to their strong religious bias; but these Welshmen are quite shrewd enough to know that the floods which still spread in the form of great lagoons and swamps

between Rawson and Trelew, extending westward to Gayman, were controllable by scientific engineering, and that the Colony was only in temporary difficulties. Rawson was washed away by the floods of 1899, but is now partially rebuilt on a most insecure site. Rawson is Italian rather than Welsh. Trelew and Gayman are the headquarters of the Welsh settlers, Trelew being connected with Port Madryn by a metre gauge railway. As the development of Patagonia proceeds the Chubut Colonies must inevitably become a valuable commercial centre.

The voyage from Port Madryn to Bahia Blanca was an instructive object lesson in the submarine conditions of the recently submerged (geologically) extension of the continent, which can be traced with its lake depressions and indentations to a distance of from 200 to 250 miles from the present coast line; the light-ship marking the entrance of the intricate channel navigation to Bahia Blanca being apparently in mid-ocean.

Between Bahia Blanca and Buenos Aires we spent a delightful day at Tandil, in driving over the enormous estancia of Senor Santamarina; in wandering round the old granite quarries, and witnessing the extraordinary developments in dairy industry which have been organised here (as at Martona) in the interests of a trade which is comparatively new, but which is bound to add enormously to the wealth of the country. No more striking example exists in all Argentina of the success which attends the strict business-like application of scientific principles to agricultural developments than this estancia at Tandil. The wealthy family of Santamarina still points with pride to a glass enclosure (like a small greenhouse) in the gardens surrounding their splendid mansion, within which is preserved the original bullock cart which was for a long time the most valuable

asset in the property of the founder of the estancia—the father of the family.

The cordial and hospitable greeting which we received from all classes of the Buenos Aires community at the close of our first tour through Patagonia was only shadowed by news of the terrible illness of the King, whom we represented as a member of the arbitral tribunal; and the consequent abandonment of all the coronation festivals and fêtes which had been projected on a magnificent scale by the Argentine Government. But if we enjoyed a quieter time at Buenos Aires than had been anticipated, it was none the less happy in all that pertained to social intercourse and local movement. It was then that we made acquaintance with many of the public institutions of the Capital—an acquaintance which was further extended during the following year, when the demarcation commission followed that of the tribunal arbitration. It has not been at all my intention to venture on any criticism of the institutions of this great capital, of which I obtained but a partial and superficial view. I can only write down my impressions, and I am very well aware indeed that want of technical accuracy may destroy much of the interest which they might otherwise possess. This is particularly the case with regard to the Press institutions, of which I could only judge as any other casual visitor would judge who depends for his daily information on his daily paper, and cannot follow the devious course of political journalistic advocacy. I am well aware that a boundary question, furnishing so much matter for public discussion as this ancient dispute between Chile and Argentina, must long ago have become a recognised “stand by” for article writers, and that more than one paper must have founded its reputation on some particular line of advocacy. In this sense the boundary question was “maintained” by the Press,

which doubtless made here and there a good business out of the dispute. Such would inevitably be the case in any country in the world; but it is not therefore fair to state (I have seen it stated) that there could have been no dispute (or that the dispute would have been settled long ago) but for the press and the politicians. I am bound to say that so long as I was in the country I never saw anything approaching to a virulent article on this subject in any South American paper whatsoever; and that on the whole the pervading tone of the public press in relation to the business of arbitration was just what one would expect in England—fair in argument, moderate in tone and temper, and distinctly useful in supporting government action. The literary standard of the leading public papers appears to me (as a foreigner) to be high; and there cannot be a question that in such details as telegraph service, foreign news, arrangements for capturing local news, completeness of information from provincial sources, such leading papers as *La Nacion* (the government paper), *La Prensa*, the radical or people's paper (which possesses a splendid organisation and magnificent premises), and *El Diario* (the *St. James' Gazette* of Buenos Aires) can hold their own with any dailies in the world. The English newspaper of the city is the well-known *Standard* (a paper with a large circulation), which apparently accepts for its motto the good old Latin grammar precept "in medio tutissimus ibis." It is always moderate and safe.

The illustrated papers are scanty, but they maintain a high level of excellence; the popular *Caras y Caretas* (the *Punch* of Buenos Aires), which, if not always flattering, is certainly always clever; but there appears to be room for an "illustrated" of more general character in Argentina. There is in Santiago a paper called *Chile Ilustrado*, which is most beautifully turned out, with excellent

pictorial reproductions, quite equal to any European paper.

El Mercurio is the leading daily of Santiago, and with a second edition (*Ultimas Noticias*) pretty well meets the requirements of the public in the capital of Chile. I take this opportunity of expressing my acknowledgments to the Press representatives of the two republics for their courteous and kindly reception of an official visitor who could not have been altogether welcome to some of them.

It only remains to sum up as far as possible the position attained by the two republics as the result of the King's Award, and to indicate in general terms what that result has been. The material gain or loss, as represented by so many square leagues of forest or field, of rugged snow-clad mountain and grass-covered upland, which that Award has apportioned to either state, is not that which is of supreme (or indeed of any very vast) consequence. The gain to both may surely be written in one large word—PEACE—for it is the assurance of Peace, continuous and lasting, based on mutual interests and the strong ties of race affinity which alone can redeem those promises of national development to which each country is heir by right of geographical position and natural wealth.

In general terms the King's Award assigns to Argentina the Lake Lacar depression, the valleys of Foyel, Nuevo, Cholila, Percey, 16th October, Corcovado, and the Upper Pico, all north of $44^{\circ} 30'$; and to Chile the valley of the Frias, all the Aysen basin except a few leagues at the head of the Simpson, the Tamango and the whole of the Maravilla and Toro basins of the Ultima Esperanza district in Magellanes territory, except the upper Viscachas. It divides two not unimportant valleys—the Jeinemeni and the Meyer—between the two states. The value of these acquisitions on either side depends

on two main conditions—fertility (or suitability for pasturage) and accessibility. In the far north, one small allotment to Chile, *i.e.*, the depression near the San Francisco pass, may be left out of the account as practically valueless, for it is neither accessible nor fertile; on the other hand, the Lake Lacar depression may prove to be of considerable value to Argentina. Not only bordering the narrow valley of the Hua Hum, but for a considerable distance covering the slopes of the enclosing mountains there is good grazing country already occupied by a mixed population of settlers, partly Argentine and partly Chilean.

It is a rather curious fact that so many, both Chilean and Argentine, settlers have been content to waive the advantages of a definite claim and title to these lands, and to start colonising without knowing under which state they could claim protection. There is no part of this disputed area possessing any promise of natural advantages which has not already been occupied, excepting perhaps some of the local valleys between Lakes Buenos Aires and Viedma, and there is no part of it which has been occupied by settlements that are either exclusively Argentine or exclusively Chilean. There were Chileans in the settlement (chiefly Argentine), of the 16th October Colony. There were Argentines in the settlements (chiefly Chilean) of Lake Lacar. In the far south the same conditions exist, but with a difference. Many of the most successful sheep farmers are recent arrivals and could claim no South American nationality. Until the Boundary Award was made all these settlers could only rank as squatters, and there was no national status anywhere which could lead to a consideration of the rights of occupation. As a matter of sentiment only (having no influence in matters of business), there are distinctly a large majority who favoured an Argentine connection in the 16th October

valley—a fact which is not surprising, seeing that this promising country is peopled with the Welsh offshoots of the Chubut Valley Colonies; and there was also a distinct majority favouring a connection with Chile in the Magellanes territory, owing probably to convenience and accessibility. Such being the general status of occupation (a status which could offer no basis whatsoever for arbitral consideration), it only remains to point out how very thoroughly (from one side the Andes or the other), every available league of possible pasture land had already been exploited by immigrants before arbitration commenced. There is, indeed, both in Argentina and Chile, a vastly greater area of promising and as yet unoccupied land accessible to Colonists outside the area lately in dispute than ever there was in it; but it is probable that the climate and the fertility of the morainic formations about the foot of the Andes slopes will combine to render the smaller area rich in pasturage of the finest quality as the process of colonisation develops.

I have referred to the extraordinary wealth of the grass lands of the Buenos Aires province developed by the distribution of cattle over them. The phenomenon of a new and infinitely richer form of pasturage replacing the original pampas grass in response to the demands made on it by cattle is not unknown in other countries, and it is not altogether to be explained by the artificial introduction of foreign seeds; and if similar results may be looked for in the Andine valleys there is no possibility of estimating what the future value of these grass uplands may eventually be. Where one acre feeds one sheep at present it may feed fifty hereafter, and speculation based on the exact measurement of areas is vain. All the best and most promising of the grazing lands lie near the line of continental water-parting east of the forest-clad mountains of the Pacific coast, and west

of the barren meseta lands of the Argentine plains, and they may be said to be included in those valleys and lake basins which I have already enumerated as having been allotted by the Award to one or other of the two Republics. The basin of the Lacar is undoubtedly valuable, but south of Lacar, in the narrow valleys of the Foyel, the upper Manso, or even in that of Nuevo, there is no wide stretch of upland to deal with. The limitations of these valleys are apparent, and the estimated area of them, if we are to believe the evidence of those settlers (Chilean and Argentine) already camped in them, would not admit of much greater extension of occupation than that which is already effected. They are essentially suitable for cattle and horse breeding, being somewhat remote and inaccessible, with no local market. Dealers visit them periodically and buy up the produce for export, chiefly, I believe, to Chile. One small Indian estancia seems practically to absorb all the Foyel pasturage. Cholila, however, offers an excellent prospect. Farming here is, to a certain extent, in North American hands, and is already well developed so far as pasturage is concerned. Nor can there be any doubt that agriculture in Cholila would pay as well as pasturage if markets were more accessible; but Cholila is not well situated for the export of agricultural produce. The Percey valley is but the connecting highway between Cholila and the 16th October Colony, where we find the widest area and the most promising fields of any of these Andine uplands. Here, indeed, is splendid promise for the future. But the colony, comparatively rich though its prospects may be, is already rather over full of settlements. Some of the farm subdivisions are but ill supplied with wood or water, and have already been practically abandoned; others have been maintained on insufficient capital, and after an ineffectual struggle have lapsed into the

hands of local speculators. A certain air of backwardness in the colony developments (chiefly due to the want of imported trees) results from the doubtful title hitherto held by the small Welsh farmers to the land they occupied. It has never been worth their while to spend money on improvements, and the colony generally must be regarded as having been in a condition of initial development which will now rapidly increase. Its commercial communications are eastward by a long land route to the settlements of the Chubut valley, for want of a better outlet. The two rivers of the colony, the Percey and Corintos, unite to form the Ftaleufu, which river, following a long and devious forest and mountain enclosed course to the Pacific, is called *Yelcho* within Chilean territory. I have already referred to the route which has been opened up from the *Yelcho* port on the Pacific to the colony by this valley, which may yet be developed into a trans-Andine high road. The colony of the 16th October with the adjacent settlements of *Cholila* and *Corcovado* (all of which are connected with Argentine territory by their geographical position) form a most important section of the territory dealt with under the recent Award, and they form a most promising field for frontier colonisation in Patagonia.

Between the valley of *Corintos* and that of *Corcovado* (to which I have already referred as a valley of promise with considerable pastoral advantages and undoubtedly a splendid soil for agricultural purposes) there are here and there a few leagues of grazing land in the *Frio* affluent of the *Corcovado* stream, and a few more in many small isolated spots in this Andine mountain wilderness; still further south beyond the *Corcovado*, there is little of importance. A fair spread of grazing ground at the head of the *Simpson* affluent of the *Aysen* surrounding the *Koslowski* settlement, with an Argentine

connection *viâ* the Senguerr river to port Rivadavia ; some more about Paliqué at the head of the Vizcachas river, with a trans-continental connection with Gallegos, or with the Chilean port of Punta Arenas ; and certain limited possibilities in the remote valleys of Jeinemeni and Myer, form the balance of the sum total of new prospects for colonial occupation opened up to Argentina by the Award. Nor can even these be justly said to be opened up until they are placed within reach of a market.

Chile now possesses an almost unlimited space of forest country bordering the Pacific. The value of it is distinctly problematical, for we do not exactly know what these forests contain, and for the most part the upper valleys of the Pacific streams which promise the best timber are also the most remote and the most inaccessible. Timber is cheap everywhere on the Chilean coast, even when imported from California, and much yet remains to be done in the matter of improved communications before the useful timber of the remote affluents of the Manso, the Puelo, the Yelcho and Palena can be brought to the market at remunerative rates. In amongst these forest-clad valleys there are many opportunities for ground reclamation and cattle grazing, but it is only in the Manso that such opportunities are likely to attract settlers, until a trans-Andine road and a sea route from the yet undeveloped Pacific coast ports of the south secures a remunerative method of transit. Cattle must reach the Chilean market (and it may be observed that Chile now offers and will continue to offer the best markets for cattle bred throughout these Patagonian highlands) on their own legs at present, and it is only from the Manso regions that this is possible within the limits of Chilean territory.

Towards the south the upper Frias and all the affluents

of the great Aysen basin rise from regions of grass-covered uplands where it is difficult to estimate the extent of possible development. There is undoubted room here for large herds of cattle and sheep, and the only drawback to the prospect of successful colonisation is the remoteness and inaccessibility of geographical position. The Chilean outlet for this part of "new Chile" is the port at the mouth of the Aysen—but it is not a developed



ON LAKE PUELO.

outlet at present, and the alternative market route crosses the width of the continent. Nothing short of actual experiment will prove the value of these scattered fields for purposes of colonisation; but it will not be surprising if the Frias and Aysen grazing lands rapidly become the centre of a new wool industry.

South of Lake Buenos Aires geographical conditions are somewhat different, owing to the relative develop-

ment of the Baker system of roads and communications. Some of the valleys (notably the Tamango), lying amongst the rugged sierras of the south may prove to be productive and profitable, and may support stock in paying quantities. But still the Chilean outlet is a bad sea port at best, and there is the alternative difficulty of a long overland route either to Argentine markets or to Chilean markets through Argentine territory. I do not believe, however, that in the long future, as the commercial relations of the two countries become more and more identified with their political union, any serious difficulty will arise in this respect. With the final settlement of the boundary dispute, there will gradually yet surely arise the far more important question whether there ever need have been an international boundary at all. Chilean roads, or Argentine roads, for commercial purposes will be as one and the same.

In the extreme south, we come to the basin of the Maravilla Lake, and the valley of the Toro in Magellanes territory. Here, indeed, we have a field of rich promise rapidly developing to fulfilment, a wide extent of magnificent pasturage for sheep, with good and comparatively easy communications, and an enterprising colony of the best class of settlers ready to take possession. This is Chile's great opportunity. It is true that the winter is long and severe, and that shelter and protection for sheep are still wanting. But improvements will come with assured possession, and there is nothing else to prevent remunerative sheep farming on a large scale. The ordinary plagues and pests of farmers seem to be happily absent here, scattered into space by Pacific gales, and the climate, if vigorous, is splendidly wholesome. It only remains for Chile to secure the permanent residence of a class of colonists who will do full justice to the abundant gifts of nature.

So much for the field of territorial dispute. When we

remember the vastly wider fields of Buenos Aires provincial pasture land, and the magnificent development of her cattle breeding and dairy industries, or the rich cultivation of the great central valley of Chile, with its still abundant opportunities for colonial extension southwards to Valdivia and the gulf of Ancud, the first impressions of surprise at the aggressive vitality and costly endurance of half a century of dispute about these Patagonian highlands again asserts itself, and tends to obscure those other considerations (neither geographical nor territorial) which pervaded the "spirit of the treaties." So, we turn to enquire what else, besides territories, the King's Award has dealt with.

It has, I think, in the first place, established a boundary which is so far based on natural features, that it cannot be mistaken nor removed. Where possible it follows lines of lofty mountains, which interpose themselves in silent majesty between the ephemeral disputes and discords of human political strife, and make it exceedingly difficult for that political strife to take effect in practical blows. It is on the whole a strategic boundary. Where this was not possible (in view of the impossible interpretation of exact treaty conditions) it at least secures to Chile a wide area of Pacific borderland, and the command in perpetuity of that boisterous ocean. Chile in future rules at least the Southern Pacific waves, so long as she keeps her most efficient little fleet in good working order. Argentina has, on the other hand, rounded off her territories with a colony which was essentially Argentine in its affinities, and should prove to be a lasting strength to the nation.

But one feels when summing up these natural considerations that they are after all comparatively immaterial. It is not the increase of colonial opportunities in the field of pasture, or agriculture ; not the acquirement of a strong wall of division between two rival states ; not

even its contribution towards the settlement of the question of the Pacific that gives unusual importance to the King's Award. Other international questions of great significance have arisen from time to time, and divergent interests have been reconciled by arbitration before there was ever question between Chile and Argentina ; but it may well be doubted if ever two countries so thoroughly prepared to support their own opinions by force of arms, so completely equipped for conflict, and with such confidence of success based on absolute faith in the validity of the reasoning which supported their claims, have ever mutually decided at the eleventh hour to reverse the policy of more than half a century, and, burying the animosities which had been the gradual product of generations of dispute, to settle their differences by the arbitration of a power which could hardly be reckoned as popular with either of them. It was a triumph of reason which must for ever vindicate the South American Spanish race from the charge of invariably acting on impulse ; and undoubtedly furnishes good evidence of a controlling force in the hands of the administrative powers of those Republican states which was, perhaps, unexpected amongst European communities. It was in fact a moral object lesson to the whole world, one which has placed these states for ever beyond that conception of republican chaos which too often has been the only conception which the European politician has had of the South American field of politics.

All the same, it was not merely the achievement of a moral success alone, which is to be credited as the motive power actuating those administrators who declared boldly for the policy of conciliation and arbitration. Confident as each state might be in the general righteousness of its cause, and in the ultimate success of its arms, there must have been many amongst the counsellors of government who could reckon up with a fair approxi-

mation to accuracy what such a success would cost. Although each of these states is now a maritime power to be reckoned with, it is doubtful whether anything decisive could have been effected at sea. Argentina not only offers no really vulnerable point of attack along her lengthy stretch of Atlantic coast, but she has no foreign trade which could be interfered with. Chile is vulnerable at many points of her coast-line, but it would be a bold man indeed who could so far reckon on the utter annihilation of the Chilean fleet, as to project an invasion of Chile based on the occupation of her sea ports. A war between the two states would inevitably be fought out across the Andes by two well matched and irregular armies, perfect in equipment and efficiency so far as guerilla war is concerned, well armed, splendidly mobile, and at the same time capable of a partial but still formidable military combination. It would inevitably be a war which would last through years, and leave the victor exhausted with the struggle ; with no power for immediate recuperation of strength financially, and no strong position amongst the Republican states of South America, until credit had been re-established, and an army re-organised.

The gain to the victor ultimately would be the unity of Patagonia—the practical combination of the two states of Chile and Argentina into one ; the accession of international dignity and power and of influence in the political counsels of South America as a whole. Such influence might even lead to the political unity of all Spanish-speaking South American republics.

The most important effect of the King's Award has been to bring these advantages within reach, *without* the expense and exhaustion of a long and doubtful war. Political combination is now possible between two strong and self-reliant republics, recognising a common ancestry, bound by the ties of ethnic affinity, owning and revering

the same splendid history (which has before now included concerted action in the common cause of South American freedom), and rejoicing in the present possession and future prospect of magnificent material advantages, such as never could possibly be secured, except under conditions of peaceful development, unchecked and unhindered by the recurrent threat of war. It is difficult to overestimate the results of such a combination on the future of South America.

There is yet another material gain of some significance although it may possibly be regarded by certain politicians with doubtful favour. Both states are now strong in the possession of military and naval strength. No countries in history have ever yet made their influence felt far afield in the world of international politics that did not possess the means of backing their opinions; and until humanity loses its human nature this will inevitably remain the final test of the soundness of one nation's advice to another.

It is usual to point to the influence of this long standing dispute as productive of nothing but mischief and expense, but it is not quite clear that the assistance afforded by it to certain processes of national development have not served a useful purpose. It is true that the family quarrel between Chile and Argentina has directly cost those countries many millions of pounds which have been transferred to foreign pockets—to the pockets of ship builders, and army contractors, and military advisers. It is equally true that the money so diverted from these South American states would, if directed into other and more reproductive channels, have resulted in a substantial increase to the material wealth and stability of each country; but we need not therefore altogether ignore the resulting assets. Fresh battalions have sprung into existence, and with them the wider extension of military service which (whatever its drawbacks may be) does

certainly, in these new countries, answer the purpose of a universal educating principle, and tend to a general levelling up of the physical, if not the moral, qualifications of the clever youth of them. Fleets have been called into being where no efficient fleets existed before, and with the fleets an increased respect for the flag, and a spirit of national cohesion and self-reliance which are far more powerful factors in the building up of the body corporate of a great people than can ever be the influence of political jugglery, or even the amassing of solid commercial wealth. And both governments have learned to know something of the physical conditions of the country of their administration. If railways are to be planned, telegraphs projected, roads extended, forests preserved, and irrigation (that greatest want of all) successfully developed over a vast extent of thirsty plain, there can be no excuse for basing such plans of public beneficence on wildly imaginative plans evolved from the brains of clever speculators—so far at least as Patagonia is concerned. It is quite an open question whether this resulting geographical knowledge is not in itself worth the greater part of the money expended over the dispute.

Who shall say to what end political combinations between these two well-armed South American states may lead? Let us remember that Argentina possesses possibilities of material development which have surely never been surpassed by any country in history; that Chile (with less promise of wealth in the future) owns a strong self-reliant race of people who are capable of great endurance and of heroic action, whilst she practically holds with her fleet the command of the Pacific; that both countries have warships, cruisers and gun-boats, which in combination would become a formidable naval power; that both countries possess a climate in which strong men are reared, and they that can put armies of them into the field; and that equally the two

states may share the advantages of the constant intercourse with Europe which will be gained by the future existence across them of one of the main commercial ways of the world. Trans-Andine railways will ere long develop to a Trans-Patagonian route to Australia from Europe, and the establishment of important commercial centres at other points than Buenos Aires and Santiago. What that means in commercial economics let those consider who have studied the influence of the Great Eastern highway to India on the rise and fall of the nations through which it has passed, or who have marked the local effect of a constant stream of passengers and mails through countries now existing.

But Chile and Argentina want immigrants, but immigrants of the right sort, immigrants who come to stay, and who will, in the magnificent climate of these southern lands, people the country with a race physically powerful and intellectually keen. And they want decentralization—less crowding in the capitals, and a more scattered population in provincial centres and country towns. All this can only result from wider extension of means of communication and the wider spread of those necessities of civilization which make a wilderness habitable. Thus the future prospects of both states centre largely on those progressive developments which only exist by grace of peace and concord; and it is this possibility of lasting peace and of continued unity in political council which has been assured to both by the King's Award.

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